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Meridian 1 and Succession Communication Server for Enterprise 1000

Background Terminal Facility

Description

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About this document

This document applies to Meridian 1 Internet Enabled and Succession Communication Server for Enterprise (CSE) 1000 systems.

This document is a global document. Contact your system supplier or your Nortel Networks representative to verify that the hardware and software described is supported in your area.

This document provides guidelines for hospitality and health care personnel use Background Terminal (BGD) to enter, retrieve, and modify data.

Who should use this document

This document is intended for individuals responsible for hospitality and health care administering and maintaining the Background Terminal.

General information

Contents

This section contains information on the following topics:

Reference list 9
Terminal setup and configuration 11
Maintenance 14

Reference list

The following are the references in this section:

- *Features and Services* (553-3001-306)
- *Administration* (553-3001-311)

Hospitality and health care personnel use Background Terminal (BGD) to enter, retrieve, and modify data associated with the following features:

- Automatic Wake Up (AWU)
- Room Status (RMS)
- Message Registration (MR)
- Call Party Name Display (CPND)

BGD helps monitor system operations by providing a visual display of information changes, hard copy backup, and traffic statistics.

The BGD package (package 99) must be equipped on the system load. Package 99 requires that the Controlled Class of Service (CCOS) package (package 81) and one or more of the following packages be equipped. Your application may require some additional feature packages. Refer to *Features and Services* (553-3001-306) for complete package requirements.

- AWU (package 102)
- RMS (package 100)
- MR (package 101)
- Property Management Systems Interface (PMSI) (package 103)
- Maid ID (package 210)
- Hospitality Screen Enhancement (HSE) (package 208)

You can use the Background Terminal (BGD) to:

- Display message queue size. In response to customer requests, the system displays messages that reflect event changes for rooms associated with Automatic Wake Up, Message Registration, or Room Status. The queue size ranges from 20 to 255 messages and is defined in the system Configuration Record (LD 17). The default value is 20 messages, and the message length is six words.

  The messages are collected for customers who have Display Terminals. The actual messages are output only to the BGD that has been defined as a Display Terminal.

- Define name strings associated with Room Directory Numbers (DNs), and to print these names for specified rooms.
- Provide Call Number Information Messages (CNIMs) that provide calling and called DN information to BGD ports. This facilitates the automatic display of guest names or other DN-related information.
- Generate traffic reports. Wake Up and display message statistics are accumulated daily starting at midnight and stored in the system for a maximum of two days. When a Print Traffic command is issued, the report for the day is printed.

Terminal setup and configuration

A Background Terminal (BGD) is connected to the system through a Serial Data Interface (SDI) port. Any ASCII serial terminal conforming to RS232-C or CCITT V. 24 standards can be used as a terminal device.

A maximum of 16 SDI ports can be configured for system Options 51C, 61C, and 81C.

SDI ports configured for the following features cannot be used as BGDs:

- Automatic Call Distribution Package C (ACD-C) Load Management/Report Printer Terminal
- Auxiliary Processor Link-Integrated Messaging System/Integrated Voice Messaging System (APL-IMS/IVMS) Link
- CDR Tape Link
- Automatic Call Distribution Package D (ACD-D) Link
- Command Status Link (CSL)
- Property Management System Interface (PMSI)

The terminal type used as a Background Terminal (BGD) may be an ASCII serial terminal conforming to EIA standard RS-232-C or CCITT specification V.24.

To configure the BGD terminals, enter the following parameters in LD 17. Also, refer to the excerpt of LD 17 in Table 1 on page 13.

A BGD can interact only with the rooms associated with a specified customer. Therefore, when configuring a BGD, you must specify which customer is associated with each BGD. If you define a physical SDI port with a two-character alphanumeric identifier, the tasks performed by the BGD will be assigned to it. If none are defined, the BGD can perform all functions associated with Automatic Wake Up, Message Registration, Room Status, and Call Party Name Display.

Background display message queue size The number of entries in the queue can be set from 20 to 255. The default is 20 entries. Enter YES to the prompt PARM and the number of entries to the prompt NDIS. Queue size changes will take effect only after the next initialization.

Device type and address A teletype (TTY) or video display terminal (VDT) device is defined for Background Terminal (BGD) input/output. Each device is assigned a physical device address (SDI port) ranging from 0 to 15. Enter TTY xx to the prompt ADAN, where xx is the device address.

Output use To define a TTY device as a Background Terminal, reply BGD to the prompt USER. In response to the prompt CUST, provide the customer (0–99) to whom the BGD will be assigned. Terminals may also be allowed access to the overlay mode. However, the Background and overlay features will interact at terminals designated to operate in this dual mode by displaying each other's messages. In addition, the BGD can only be used for data input or retrieval in the mode for which it is accessed.

Table 1 on page 13 contains excerpts from LD 17. Refer to *Administration* (553-3001-311) for complete details.

Table 1
Background Terminal configuration (LD 17)

Prompt	Response	Comment
REQ	CHG	Modify existing data.
TYPE	CFN	Configuration data block.
ADAN	NEW, CHG, MOV, OUT TTY, PRT 0-15	Add, change, move, or remove an I/O device, type aaa, port x.
CTYP	aaaa	Card type.
	DCHI	Asynch port (even) on DCHI card.
	MSPS	Misc/SDI/Peripheral Signaling card.
	SDI	Single port SDI card.
	SDI2	Dual port SDI card.
	SDI4	Four port SDI card.
	XSDI	SDI paddle board.
GRP	0-4	Network group number for option 81 systems.
DNUM	0-15	Device number (same as ADAN number).
USER	BGD	Background Terminal interface.
CUST	xx	Customer number.
ADAN	<CR>, ****	Go to next prompt or exit overlay.

Maintenance

LD 37 is used to diagnose faults with disk units, tape units, teletype (TTY), or Serial Data Interface (SDI) cards. It provides enable, disable, status, and test functions on these devices. Problems are indicated in Input/Output Diagnostic (IOD) messages.

Use the following commands from LD 37, listed in Table 2 on page 14, to test and maintain BGDs. Refer to *Administration* (553-3001-311) for complete details.

Table 2
Maintenance commands (LD 37)

Command	Purpose
TTY x	Test TTY x. This sends a string of characters (ABC) followed by "READY FOR INPUT" to the terminal. Anything entered on the keyboard will be echoed until END is entered.
STAT TTY x	Provides the status of TTY x (port nn).
ENL TTY x	Enables TTY x (port nn).
DIS TTY x	Disables TTY x (port nn).

After configuring the BGDs for the customer, define the terminal function.

- Control
  These terminals enter, change, and retrieve data for the Automatic Wake Up (AWU), Message Registration (MR), Call Party Name Display (CPND), and Room Status (RMS) databases. They can also change options and control settings.
- Read Only
  These terminals display information only. They cannot enter or change any parameters for the associated features.

- Print
  These terminals are usually printers, for automatic printing of AWU, MR, and RMS reports at a specified time.
- Display
  These terminals are usually input/output devices that record changes to AWU, MR, and RMS on an ongoing basis.

Using the Background Terminal

Contents

This section contains information on the following topics:

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Reference list

The following are the references in this section:

- *Features and Services* (553-3001-306)
- *Administration* (553-3001-311)

The Background Terminal (BGD) helps you manage your Meridian 1 system by carrying out orders that you type in from a terminal keyboard. The BGD also provides you with information to help you figure out how to operate your system to best meet your needs.

Various system and individual options are available through the Background Terminal (BGD).

System options

- Assign BGD terminal options, such as read only, read/write, and print only
- Assign unique identification codes to terminals
- Restrict terminal access to features
- Direct printouts to specific terminals
- Assign automatic daily routines
- Allow or deny range entry for room DNs
- Allow or deny the substitution of X in a room DN

- Provide a confirmation message each time data is manually changed by entering a terminal command
- Provide Automatic Wake Up traffic statistics, and display messages
- Assign unique two-letter language identifiers for use with Multi-Language Automatic Wake Up

Individual feature options

Automatic Wake Up

- Set automatic display of particular types of wake-up events as they happen
- Set the activation time for secondary wake-up announcement

Message Registration

- Set a unit cost figure to generate total call charges for metered calls
- Set the automatic display option for particular DNs on for some, off for others

Room Status

- Set the ready for sale print criteria
- Set the language ID for Automatic Wake Up messages
- Set the time for automatic update of room cleaning status
- Define automatic room status applied with check-in command
- Set automatic display of room status changes from particular sources as they happen
- Assign guest rooms to categories

Call Party Name Display

- Set CPND name assignments for eligible DNs

Accessing the Background Terminal

The BGD mode is automatically accessed, and no login procedures are necessary. Use the LOGI password sequence for service change administration access, if configured.

After logging out of the Service Change Administration mode, the terminal reverts to its previous parameter settings in the Background mode. The Background command set is recognized once again.

> ***Note:*** After service change, the BGD terminal is ready for use. It has unrestricted access to the BGD features.

Commands

The BGD is command oriented. In order to accomplish any task in a Background Terminal, a command must be entered. Command keywords define the action and the feature to which the action is to be directed. Only the first two characters of any command keyword need to be typed on a command line.

- Commands are terminated by pressing the return key <CR>.
- Time is entered and retrieved using the 24-hour clock.
- Entering **** stops the current activity.

Items shown in bold upper-case characters (**SE**, for example) are actual commands expected by the system, except for values in parenthesis. Items in parenthesis are default or optional values and need not be entered.

Items shown in non-bold lower-case characters represent variables. They indicate the form that information should take and are not typed in as they appear. For example, the range of directory numbers for a set of rooms is represented by "dn1 dn2."

Directory number expansion

With software Release 13 and later, Directory Number Expansion (DNXP) is introduced to allow an internal DN to have up to seven digits. If this package is equipped, any BGD command, response, or display containing a DN field is expanded to accommodate up to seven digits.

User modifications

After service change, the BGD is ready for use with unrestricted access to Background features. The customer or user may want to change certain system criteria or impose certain system and/or terminal restrictions by changing the BGD option settings. This, in effect, customizes the BGD arrangement to suit the needs of the customer.

Configure port and identification codes

All BGD TTYs are assigned Physical SDI Device Numbers associated with their assigned ports. The ports or terminals in your system each have a number to identify them, and they can also be assigned a two-letter port ID. In order to print something at a terminal other than the one at which you are typing, that terminal must have a port ID. The port ID can be two letters or a letter and a number. It cannot be completely numeric.

The following combinations of letters cannot be used, because they are used in commands:

AU, FI, IS, LO, ME, OP, PO, PR, SE, ST, TR, WA

To assign a two-letter port ID to a terminal:

SEt OPtion IDentifier nn id **<CR>**
where:
nn = port number
id = two-letter ID

To change the port ID of a terminal:

SEt OPtion ID oldname newname **<CR>**

Print port

To print port information, use the following print commands:

(PRint) POrt
This command prints the current setting for all terminals.

(PRint) OPtions
This command prints the current option setting for all terminals.

Configure terminals

This section describes how to set which terminals will be allowed to perform which functions. There are two basic types of restrictions you can make.

- **Restrict terminal to a feature or features.** A terminal can be allowed to set Automatic Wake Up, Message Registration, Room Status, or Call Party Name Display only, or any combination of these features.
- **Restrict access to data.** A terminal can be allowed to either change values or just read information. A terminal can be assigned to print reports or to display messages. For just printing or display, you can use a printer that does not have a keyboard.

Restrict terminal features

To allow a particular terminal to set system features:

SEt OPtion POrt portID item(s) **(ON) <CR>**

To deny a particular terminal permission to set system features:

SEt OPtion POrt portID item(s) **OFf <CR>**

To see what all the terminals in your system are currently set to (see "Print terminal setting" on page 30 for a sample listing):

(PRint) POrt <CR>

Operating parameters

The choices you can use as items in the commands listed above are listed below:

- MEter
- OPtion
- STatus
- WAke
- Call Party Name Display

An OPtion terminal is one that can change the configuration and the options for the whole system. You must retain at least one terminal as the OPtion terminal.

Any combination of features is possible. For example, a terminal that can be used for both Room Status and Automatic Wake Up, but not for Message Registration, would be set to STatus WAke.

Restrict terminal access to data

To allow access to data:

SEt OPtion POrt portID item(s) **(ON) <CR>**

To restrict access to data:

SEt OPtion POrt portID item(s) **OFf <CR>**

To allow a terminal to read data but not change it:

SEt OPtion POrt portID **REad (ON) <CR>**

To designate a terminal as a printer:

SEt OPtion POrt portID **PRint (ON) <CR>**

To prevent a terminal from being able to change data:

SEt OPtion POrt portID **SEt OFf <CR>**

Operating parameters

The choices you can use as items in the commands listed above are listed below:

- SEt can change data
- REad allows read only, cannot change data
- DIsplay displays messages
- PRint prints reports requested at another terminal

Any combination of these is possible.

You can combine feature restriction and access restriction. When typing the command the feature comes first, the access second. For example

SEt OPtion POrt portID **WAke DIsplay (ON) <CR>**

would assign to this terminal the job of displaying wake-up messages.

SEt OPtion POrt portID **MEter PRint (ON) <CR>**

would assign this terminal to be the printer for the Message Registration feature.

Note 1: You must have one OPtion terminal that can reset system options if you need to in the future.

Note 2: Only one terminal can have its restrictions changed in one command line. You may use either its number or its two-letter port ID to identify it.

Note 3: You cannot turn options ON and OFf in the same command. The words ON or OFf always come at the end.

Note 4: To set everything OFf for a particular terminal, type **SEt OPtion POrt** portID **OFf <CR>**

Table 3
Set command to restrict or allow access to features examples

Input	Comments
SEt OPtion POrt portID **WAke (ON) <CR>**	Allow this terminal to access Automatic Wake Up
SEt OPtion POrt portID **STatus OFf <CR>**	Restrict this terminal from accessing Room Status

Managing terminal restrictions

Follow these steps to manage terminal restrictions more easily.

1. Decide what you want each terminal to do, on paper.
2. Decide which terminal will be the OPtion terminal, retaining control over what the others can do.
3. Using this terminal, turn OFf everything on each of the others (see Note 4 above).
4. Turn ON what you want.

Define options for the Set command

The four options you can define for the Set command are listed below:

- ALl
- X substitution
- RAnge
- COnfirm

You may choose to disallow the setting of all DNs to some value.

To disallow the setting of all DNs to some value:

SEt OPtion ALl OFf <CR>

To disallow the use of X to represent all possible values 0–9 of a digit in a DN, so that groups of DNs which have some pattern may all be set to some value:

SEt OPtion X OFf <CR>

For example:

A certain class of rooms ends with 6.
12X6 will set 1206, 1216, 1226, 1236, and so on.

All rooms on the 14th floor have DNs which start with 14.
14XX will set 1400-1499 to some value.

To disallow a sequential range of DNs to be set to a value by giving the first and last numbers in the range:

SEt OPtion RAnge OFf <CR>

Note: If the RAnge option is set off, ALl is also set off.

To disallow your input to be echoed or repeated on the line underneath for confirmation:

SEt OPtion COnfirm OFf <CR>

To turn all options off:

SEt OPtion OFf <CR>

To turn all options on:

SEt OPtion ON <CR>

Operating parameters

More than one option can be entered on each command line. For example,

SEt OPtion X COnfirm OFf <CR>

will turn off both X substitution and the confirmation echo.

The word OFf always comes at the end. If an option is turned off and someone attempts to type a command using it, the message **COMMAND OFF** will appear.

To turn these options back on, simply use the word ON in place of the word OFf. For example, to turn the ALl option and the RAnge option back on:

SEt OPtion ALl RAnge ON <CR>

To find out which options are set on and which are set off:

(PRint) OPtion <CR>

In the chart that is printed as a response, look for the words ALL, RANGE, CONFIRM, and X RANGE.

Print system settings

You can use your terminal to print out the current BGD settings with this command:

(PRint) OPtion <CR>

The options are:

- Set options—ALl, COnfirm, RAnge, X RAnge
- Guest room category names
- For sale definition
- Check-in/check-out definition
- Unit cost amount for metered calls
- Display control
- Time selection and cleaning status update methods
- Terminal IDs and functions
- MLWU language ID

Operating parameters

When your Meridian 1 system first comes into service, some options are set ON, and others OFf.

Enter the Print command to find out how the options are set.

Table 4
System options printout example

ALL	ON					
CONFIRM	OFF					
RANGE	ON					
X RANGE	ON					
CATEGORY	1: 1BED	2: 2BED	3: KTCH	4:	5:	
	6:	7:	8:	9:	10:	
	11:	12:	13:	14:	15:	
CHECK	CO DN	MW RE	TL WA	LA	VI	
DISPLAY	ME ST:	DE CC	DI RM	WA: AN	RE	
SALE	PA VA					
TIME	DETECT	OFF				
	DIAL	ON				
	RAN2	OFF				
	REQUEST	OFF				
LANG	0: EN	1: SP	2: GR	3: FR	4: JP	5: CH
00 PORT 0	WA: SE	** DI	ME: SE	** **	OP: SE	** ** ST: SE

Print terminal setting

You can print a list showing the number, name, and setting for each terminal.

To find out the ID and current setting of all terminals in your system:

(PRint) POrt <CR>

Example printout:

```
04 PORT HC WA: SE ** ** ME: ** ** ** OP: ** ** ** ST: ** ** **
```

Terminal 4, also called HC, is a SEt terminal for wake-up. Asterisks (*) mean that other functions are turned OFf for this terminal.

Within each feature, the order of functions is: SEt or REad, PRint, DIsplay.

To find out the Terminal Number and the port ID of the terminal you are currently using:

*** <CR>**

A reply example follows.

```
TTY 01 SCH MTC TRF BUG BGD CUST 03 AC 1236
```

On the left, the first item specifies the kind of device you are using (in this case, TTY for teletype). The number next to it is your Terminal Number (in this case, 01).

At the far right the last number is the time (12:36 in this case). Next to it is your port ID, if you have assigned one (in this case, AC).

Print at other terminals

You can ask to have a report printed at a terminal other than the one where you type the command. Simply replace the word PRint in any print command with the two-letter port ID (can be a default port number in the ID field) where you want the printout. When you do this, the command is placed on your Automatic List for the few moments until printing occurs and then removed. This temporary command would appear as TEMP if you printed your list.

Table 5
Printing at another terminal command examples

ZZ MEter ALI <CR> Print all meter values, now, at terminal ZZ.
AUtomatic 2130 ZZ MEter ALI <CR> Print all meter values automatically at 9:30 each evening, at terminal ZZ.

Background Terminal displays

A terminal can display messages showing each change to the information stored as that change happens. For example, every time a wake-up call is answered, or every time a room status changes, it can be displayed. If your terminal is attached to a printer, it provides a traceable record of events.

You can choose to print some or all display messages for one, two, or all three features. Do the following for each feature:

- Assign a terminal to show the display messages.
- Decide what is to be displayed, and turn these displays on.

To see which displays are turned ON or OFF, type:

(PRint) OPtion <CR>

In the chart that prints, look at the line beginning with DISPLAY. An example of the chart is shown in "System options printout example" on page 29.

Display format

Table 6 on page 33, Table 7 on page 34, and Table 8 on page 36 show the display format and the column parameters. Table 6 on page 33 shows the format with Maid ID, Multi-Language Wake Up, and VIP Wake Up packages equipped.

> *Note:* Software Release 16 introduces Multi-Language Wake Up. Maid ID and VIP Wake Up are available with software Release 17 and later.

The first line shows the source of the change, the DN and the status immediately prior to the change. The second line shows the new status. At the end of the second line is the time the change took place.

After sysload, blocks of asterisk (*) characters may be printed in the occupancy and cleaning fields (columns 1 and 2) to show they have not been assigned occupancy or cleaning status. If this happens, enter the missing information.

The second line of a display message may be replaced by a warning, as described below. These warnings will also appear in a confirm message (see "Define options for the Set command" on page 26) in the same circumstances.

- **ERR: NO LAMP** An attempt was made to turn Message Waiting or Do Not Disturb condition on or off, and the room telephone has no lamp.
- **ERR: BAD LAMP** The lamp is not functioning properly.
- **ERR: NO SALE** Operations, such as check-in, were attempted on a room that is not for sale.
- **ERR: NOT VAC** A check-in was attempted for a room already occupied.
- **ERR: NOT OCC** A check-out was attempted for a room not occupied.

Software Release notes

With software Release 15 and earlier, the display includes up to column 7 and the time (AT hh:mm) (up to 62 characters).

Software Release 16 and Multi-Language Wake Up (MLWU) adds column 8 to the display. The time (AT hh:mm) follows at the end (up to 72 characters total). If MLWU is not equipped, the display remains the same as it appears with software Release 15.

Software Release 17 introduces Maid ID and VIP Wake Up. This adds Maid ID information, just before column 1 and column 9, to the display. Column 9 appears whether or not MLWU and VIP Wake Up are equipped. If Maid ID is equipped, the ID number appears on the second line. If it is not equipped, or the ID not defined, blanks fill the spaces.

Table 6
Display format (Maid ID, Multi-Language Wake Up, & VIP Wake Up)

ST	54	CO	CO	CO	CO	CO	CO	CO	CO	COL9
source	02	L1	L2	L3	L4	L5	L6	L7	L8	
	xxx	CO	CO	CO	CO	CO	CO	CO	CO	COL9 AT
	x	L1	L2	L3	L4	L5	L6	L7	L8	hh:mm

ST source = how the room status was changed (what method)

5402 = Room DN (with DN Expansion equipped this number can be up to 7 digits long)

xxxx = Maid ID (one to four characters, left justified with the DN, any unused portion is left blank) If Maid ID is not equipped, this is left blank. Output begins with Column 1.

Column 1 = vacant or occupied

Column 2 = cleaning status

Column 3 = telephone Class of Service

Column 4 = Message Waiting lamp

Column 5 = Do Not Disturb on

Column 6 = if ready for sale

Column 7 = category

Column 8 = language (if Multi-Language Wake Up is equipped)

Column 9 = VIP Wake Up (if equipped)

AT hh:mm = time the change occurred

Table 7
Display values (Part 1 of 2)

Item	Value
ST source	ST-COS (Check-in/check-out from a Class of Service key on a telephone) ST-DET (Off-hook detection of a room telephone) ST-DIAL (Dial access code from a room telephone) ST-RMK (RMK key on an SL-1 or digital telephone) ST-TERM (Terminal)
5402	Room DN (up to 7 digits with DN Expansion, up to 4 digits without DNXP)
xxxx	Maid ID number (1–4 digits)
Column 1	OCC (Occupied) VAC (Vacant) *** (no status yet)
Column 2	REQD (cleaning requested) PROG (cleaning in progress) CLND (cleaned) PASS (cleaning passed) FAIL (cleaning failed) SKIP (cleaning skipped) NSAL (not for sale) **** (no status yet)
Column 3	UNR (unrestricted) CUN (conditionally unrestricted) CTD (conditionally toll restricted) TLD (toll denied) SRE (semi-restricted) FRE (fully restricted) FR1 (fully restricted 1) FR2 (fully restricted 2) CCOS (controlled class of service) EC1(enhanced controlled class of service 1) EC2 (Enhanced Controlled Class of Service 2)
Column 4	MWL indicates the message waiting lamp is on (blank if lamp is not on)
Column 5	DND if Do Not Disturb is on (blank if not on)
Column 6	SALE if room is for sale (blank if not)

Table 7
Display values (Part 2 of 2)

Item	Value
Column 7	CAT: 1 CAT: 2 CAT: 3 . . . CAT: 14 CAT: 15 Blank if no category is assigned
Column 8	LANG: 0 or two-character mnemonic LANG: 1 or two-character mnemonic . . . LANG: 5 or two-character mnemonic Blank if default language (0) is assigned, or Multi-Language Wake Up is unequipped
Column 9	VIP if VIP Auto Wake Up is assigned (blank if not equipped or assigned)
AT hh:mm	Time of day the change occurred.

Table 8
Display format parameters (Part 1 of 2)

Item	Length	Start position
ST source	up to 7 characters + one space (If fewer than 6 characters, the spaces fill before adding the space)	0
5402	Up to 7 digits (left justified) with DNXP with NO following space (If fewer than 7 digits, the spaces fill before adding the space)	8
	Without DNXP, up to 4 digits + 3 spaces (If less than 4 digits, the spaces are filled)	8
xxxx	1–4 digits (left justified) + 3–6 leading spaces into column 1 (1 digit has 6 spaces, 2 digits have 5 spaces, etc.)	
	15 spaces if Maid ID is not equipped, or there is no Maid ID.	8
Column 1	3 characters + one space	15
Column 2	4 characters + one space	19
Column 3	3 characters + one space for padding + one space to line up	24
Column 4	3 characters + one space (or 4 spaces)	29
Column 5	3 characters + one space (or 4 spaces)	33
Column 6	4 characters + one space (or 5 spaces)	37
Column 7	Up to 9 characters total	
	One-digit categories have 4 characters + one space + one space to line up with two digit category, + 2 digit + two spaces	
	Two-digit categories have 4 characters + one space + two digits + two spaces	
	If no category is assigned, 9 blank spaces are used	

Table 8
Display format parameters (Part 2 of 2)

Item	Length	Start position
Column 8	Up to 10 characters total (including the leading space) One leading space appears before the keyword LANG: begins Column 51 is where the leading space appears, column 52 is where the LANG actually begins	51
	Two-character language mnemonic format is one space to line up the column + 5 characters (LANG:) + one space + 2 character mnemonic + one space to line up with column 9	
	One-digit language identifier format is one space to line up the column + 5 characters (LANG:) + 1 digit language identifier + one space for padding + one space to line up with column 9.	
	If Multi-Language is not equipped, 10 blank spaces.	
Column 9	3 characters + one space 4 spaces if VIP is not equipped or not enabled.	61
AT	4 characters 2 leading spaces appear before keyword AT appears. 2 leading spaces + 2 characters	
	Actually begins at column 67 due to leading spaces	65
hh:mm	Total of 7 characters including leading spaces	
	2-digit hour time (12:55) has 2 leading spaces + 2 digits (hh) + one character (:) + two digits (mm)	71 (2-digit hour)
	1-digit hour time (1:15) has 3 leading spaces + digit (h) + one character(:) + two digits (mm)	72 (1-digit hour)

Display wake-up events

To assign a terminal for wake-up display:

SEt OPtion POrt portID **WAke DIsplay (ON) <CR>**

Wake up events that can be displayed as they happen are listed here.

ENTRY	The attendant (or guest) enters or cancels the wake-up request.
ANSWER	The wake-up call is made, and answered by the guest.
RETURN	The call is returned to the attendant.

To display wake-up events, the basic command structure is

SEt OPtion DIsplay event(s) **(ON) <CR>**

For example, to have a message displayed whenever a call is returned to the attendant:

SEt OPtion DIsplay REturn (ON) <CR>

You can choose more than one of these events in the same command. For example, to display calls entered and calls answered but not calls returned to the attendant:

SEt OPtion DIsplay ENtry ANswer (ON) <CR>

To display all three types of events:

SEt OPtion DIsplay WAke (ON) <CR>

To stop the display of wake-up calls being answered:

SEt OPtion DIsplay ANswer OFf <CR>

You can turn off more than one display at the same time. For example, to turn off the display of calls answered and calls being returned to the attendant:

SEt OPtion DIsplay ANswer REturn OFf <CR>

Note: The word OFf always comes at the end. Also, you cannot turn displays ON and OFf in the same command.

A typical display message would look like this:

WAKE UP 5006 NONE ATTN ENTR TO 6:45 AT 16:00

Words that may appear are shown in the following list:

ATTN ENTR	attendant entry
SET ENTR	guest entry
ATTN RETN	call returned to the attendant
TERM CHG	terminal change
CALL ANS	call answered by the guest
SYST BLKD	system blocking caused the attendant return
EQPD FAIL	a hardware failure caused the return
ATTN DEL	the attendant canceled a call
SET DEL	guest canceled a call
CHK DEL	a room status check-out command canceled a wake-up call
LNG(#) FAIL	recording for language number (#) failed or cannot be accessed
NONE	used instead of a time when there is no wake-up time scheduled
VAWU ANS	VIP wake-up call answered by guest
VAWU NOAN	VIP wake-up call not answered by guest
VAWU CANC	VIP wake-up call canceled by attendant

Display message registration events

Follow these steps to have meter changes displayed.

1 To assign a terminal for meter display:

SEt OPtion POrt portID **MEter DIsplay (ON) <CR>**

2 The system DISPLAY option must be turned on to have any meter changes displayed. To turn on the system meter display:

SEt OPtion DIsplay MEter (ON) <CR>

To turn it off again, just replace ON with OFf.

The meter for an individual DN must have its own display turned on as well if you wish to display changes to it. This gives you the choice of turning all meter displays on, or only those you require. To turn the display of a particular meter or groups of meters on or off, refer to "Turn meters on and off" on page 93.

A typical display message would look like this.

ROOM METER 1235 DISP 40 TO DISP 42 AT 16:00

The value of the meter for DN 1235 was changed from 40 to 42 at 4:00 pm.

Display room status events

To assign a terminal for room status display:

SEt OPtion POrt portID **STtatus DIsplay (ON) <CR>**

To turn on the display of room status changes:

SEt OPtion DIsplay STatus (ON) <CR>

To turn it off:

SEt OPtion DIsplay STatus OFf <CR>

Particular sources of input can be displayed or not displayed as required. Command format is the same, using one or more of the following items in place of STatus. The choices are listed below.

CCos	CONTROL COS key on an SL-1, or digital telephone, or Attendant Console
DEtect	off-hook detection of room telephone
DIal	Dial Access using room telephone
RMk	Room Status key on an SL-1 or digital telephone
TErminal	changes entered by typing at a terminal

Refer to "Set automatic control of room cleaning status" on page 74 and "Set check-in, check-out parameters" on page 77 for additional information.

To turn on one of the STATUS options:

SEt OPtion DIsplay item(s) **(ON) <CR>**

To turn any of these off, use OFf in place of ON.

Note: The word ON or OFf always comes at the end, and items cannot be turned ON and OFf in the same line.

Automatic daily routines

You can store up to 12 commands on the Automatic job list for execution at a predesignated time. If you use the Automatic "CLeaning REquested" option (to change the cleaning status of all occupied rooms to REquest cleaning [RE] at a specified time), it occupies auto list entry number 12, so only 11 commands can be stored. Commands are put into the Automatic job list by specifying any valid command with the following syntax where "hhmm" is the 24-hour clock time when the command executes, and "command" is the job to be executed at hhmm.

AUtomatic hhmm command **<CR>**

Note: The list entry number is assigned by the system.

For example, at 11:00 p.m. create a printout of all Message Registration meters having non-zero values. Enter the following:

AU 2300 (PR) ME AL

Note: The data specified in this example is printed at the Meter print port if one has been assigned or at the terminal entering the information. If you want the data to print to another terminal, enter a Port ID in the command field (for example, **AU 2300** Port id **ME AL**).

If the list is full (that is, contains 12 entries), you must delete one of the stored entries before another command can be added to the list. To delete an entry in the Automatic job list, use the following command. Note that "nn" is one of the entries in the Automatic list.

SE AU nn **OF**

To print the contents of the Automatic Job list, enter:

(PRint) AUtomatic

Output may look like this, where "AB" and "CD" are port IDs.

```
01 AUTO AT 9:00 AB PR WA 0 9999
02 AUTO AT 9:00 CD PR WA 0 9999
```

If two jobs are scheduled for the same time, the job with the lower entry number is processed first. If the first job is finished within the same hour, the second job starts immediately after the first one is done. If it is already the next hour when the first job is finished, the second job will not be executed at all.

To print all the wake-up calls at 10:00 p.m., enter the following command where "H1" and "H2" are the port IDs:

AUtomatic 2200 H1 H2 WAke ALl

- To print the contents of the automatic list:

  (PRint) AUtomatic <CR>

  You will receive a copy of the contents of your Automatic job list. Each command in the list has a number in the range 1–12.

- To remove a command from the Automatic list:

  Print the list, as described above, to find the number of the command you wish to remove, then use the following command to remove it:

  SEt AUtomatic nn **OFf <CR>**

  where "nn" is the number of the item you wish to remove from the list.

Table 9
Generating automatic daily routines

AUtomatic 900 (PRint) STatus ALl <CR>

Add a command to the list. This command tells the system to print the status of all guest rooms at 9:00 each morning.

AUtomatic 1730 (PRint) MEter 4201 4225 <CR>

Add a command to the list. This command tells the system to print all non-zero telephone meters from DN4201 to 4225 at 5:30 each afternoon.

SEt AUtomatic 1 OFf <CR>

Remove item 1 from the list.

(PRint) AUtomatic <CR>

Print the contents of the Automatic list. If it contained the two items above, it would look similar to this.

01	AUTO	AT	9:00	AB	PR	ST	0*	9999*
02	AUTO	AT	17:30	CD	PR	ME	4201	4225

* 0–9999 represents ALl.

Full Automatic list

If your list becomes full because of a temporary command, you will get a message TRY AGAIN. Simply wait a few minutes and type in your command again.

If your list already has 12 entries and you try to add another item (number 13), you will get a message LISTFULL. You must remove an item before you can add a new one. An automatic cleaning requested procedure (see "Set automatic control of room cleaning status" on page 74) always uses list entry 12 and will not be shown as a list member. If so, your list is full with 11 entries.

Traffic data

The traffic printout shows system activity for a 24-hour period. It gives wake-up call statistics and display message statistics.

To request the traffic printout:

(PRint) TRaffic <CR>

To have it printed at another terminal, replace the word PRint with the port ID where you want it printed.

To have it printed at the same time every day, add this command to the automatic list "Generating automatic daily routines" on page 43. The format for a traffic printout is shown in Table 10 on page 45.

Table 10
Traffic printout format (Part 1 of 2)

System	**DD(a)**	**TIME**	**0:00(b)**			
WAKEUP	dd(a)	0000(c)	0000(d)	0000(e)	0000(f)	0000(g)
0000(h)	00.0(i)	00.0(j)	0000(k)	0000(l)		
DISP	TOT		0000(m)	0000(n)		
	PORT*(o)		0000(p)	0000(q)		

Legend:

a = date

b = time

c = total number of wake-up calls (includes successful and failed calls)

d = total number of calls answered after one attempt

e = total number of calls answered after two attempts

f = total number of calls answered after three attempts

g = total number of calls returned to the attendant (unanswered or blocked)

Table 10
Traffic printout format (Part 2 of 2)

h = number of times a full time interval caused an attendant entry failure

i = average call answer time in seconds

j = average call holding time in seconds

k = number of times the default AWU RAN routes are used due to language RAN route failure.

l = number of VAWU attempts that do not find an idle attendant. Maximum of 3 attempts per VAWU request.

m = total number of display messages

n = total number of display messages that failed on all ports. The display message handled on any BGD that failed on others is not included.

o = port ID or a terminal number

p = total number of display messages on the port

q = total number of display messages on the port that failed

Display option

A message can be printed to record each change made to Hotel/Motel feature data as it occurs. These optional display messages provide a traceable record of events. One or more terminals must be assigned to print these messages.

The following is the command structure to set display options.

SE OP DI items **ON/OFf**

Choices for items to be displayed are as follows.

Automatic Wake Up items

AN calls answered
EN calls entered/deleted
RE calls returned to attendant
WA wake, which includes all three event types

Message Registration To enable the display of meters in general, use ME for "item" in the command above. Individual meter display can then be turned on or off as required.

SE ME dn DI (ON), OFf
dn1 dn2
dnx
ALl

The last two words, DI ON/OFf, can be added to the end of a command that sets meter values.

Room Status Display choices can be changed in several ways.

CC CCOS key on a telephone
DE off-hook detection of room
DI Dial Access using a room phone
RM Room Status key (RMK) on an SL-1 or digital telephone
TE a terminal
ST status, which includes all five of these input sources

Display queue size If the volume of display messages required is large, queue wrap-around may cause the loss of some messages. On the Traffic printout the number of display messages lost is shown. Increasing the display queue size (default is 20 messages) is a service change operation in LD 17.

Call Number Information Messages

Call Number Information Messages are available in Software Release 12 and later. If the terminating telephone has Call Number Information Allowed (CNIA) Class of Service, the system sends Call Initiation and Call Termination messages for calling and called DNs on a real-time basis to the BGD port.

Message formats sent to the BGD port are shown below:

- ST-CI xxx...x yyy...y
- ST-CT xxx...x yyy...y

  Legend:

  xxx...x = Calling DN

  yyy...y = Called DN

Call Initiated (CI) A Call Initiated message is sent when the terminating telephone has Call Number Information Allowed (CNIA) Class of Service (CLS) and one of the following conditions occurs:

- The telephone handset is lifted and a number dialed.
- The call is reestablished from on-hold status.
- The telephone is the third party in a call transfer.
- The telephone terminates a forwarded call.
- The call is picked up by a station.
- The Call Waiting key on a CNIA telephone is pressed.
- The call is extended by an attendant.

Call Terminated (CT) A Call Terminated message is sent when the terminating telephone has Call Number Information Allowed (CNIA) Class of Service (CLS) and one of the following conditions occurs:

- Call termination to a non-CNIA telephone
- Call Forward No Answer (CFNA)
- Call Park
- Call Transfer from originating or terminating telephones
- Call Pickup received by the telephone
- Conference call
- Call On Hold

No messages are sent in the following cases:

- Dial Intercom calls
- Overridden calls
- Attendant calls
- CNIA-originated calls
- Automatic Wake Up calls
- Trunk calls

Operating parameters

Class of Service for CNIA is limited to 60 telephones and is assigned in LD 10 and LD 11. LD 20, LD 81, and LD 83 modify printing and counting, based on CNIA/CNID CLS. Refer to *Features and Services* (553-3001-306) and *Administration* (553-3001-311).

A telephone that is assigned Virtual ACD Agent (VMA) Class of Service cannot be assigned CNIA Class of Service.

Collocated telephone and TTY equipment is needed to fully implement this feature.

Automatic Wake Up

Contents

This section contains information on the following topics:

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Operating parameters 62

Reference list

The following are the references in this section:

- *Features and Services* (553-3001-306)

Automatic Wake Up enables the Meridian 1 to place wake-up calls automatically. An attendant may enter the wake-up information specified by the guest, or the guest enters the wake-up information from their room telephone. At the appointed time, the system places the wake-up call. Upon answering, the guest hears a recorded wake-up announcement or a personal wake-up message.

If the call is unanswered after one to three attempts, or if it is blocked by heavy traffic or system malfunction, it is either returned to the attendant or disconnected, depending on the option selected in the software (LD 15).

You can use your BGD to enter a wake-up call request (see "Set wake-up call times" on page 54) and you can use it to retrieve wake-up call information (see "Find wake-up call times" on page 58). You can find out the wake-up times that have been set for a guest's telephone or for a group of telephones.

A map or hour-by-hour (shown in five-minute increments) summary of a day's wake-up calls is also available (see "Print wake-up call map" on page 61). You can also get a continuous printout or display of any or all wake-up events as they occur.

For a complete description of Automatic Wake Up, refer to *Features and Services* (553-3001-306).

Guest Entry of Auto Wake Up (GEWU)

A wake-up request can be entered by the attendant or craftsperson on the BGD, or by a guest on the room telephone (see Guest Automatic Wake Up in *Features and Services* (553-3001-306)).

When the guest programs or cancels the wake-up call via the Wake Up Key (WUK) or a Flexible Feature Code (FFC), a display message is sent to the Background Terminal. If the Display option for AWU is set, a display message is directed to the terminal designated for wake-up display when a guest programs or cancels a wake-up request. Software Release 17 adds a display wake-up message to room telephones that are equipped with a display.

Multi-Language Wake Up (MLWU)

A customer-definable language can be assigned to a room telephone at any time through the BGD or service change (LD 10 or LD 11). The language remains unchanged until the next language assignment; however, the customer may opt to clear the language at check-in and check-out times. The language assigned to a room DN is only stored with the primary appearances of the room DN.

If Automatic Wake Up is enabled, up to six language-specific Recorded Announcement (RAN) route pairs (both am and pm for each language) can be configured. The languages correspond to the RAN routes RAN1/RAN2, LA11/LA12, ..., LA51/LA52 in LD 15. The only requirement is that Language 0, the default language routes RAN1 and RAN2, must be defined.

VIP Automatic Wake Up

VIP Automatic Wake Up (VAWU) is a software Release 17 enhancement to the AWU feature. VAWU allows rooms to be designated as VIP so that guests can be awakened by a personal telephone call from the attendant rather than the RAN wake-up. At the requested time, the attendant is notified of the VIP wake-up call.

A VIP room is one whose DN is assigned VIP designation.

Set wake-up call times

You can use your BGD to set wake-up call times for a single DN or a group of DNs.

To set a wake-up call time for one DN:

SEt WAke dn **TIme** hhmm **<CR>**

To set a wake-up call time for a consecutive group of DNs:

SEt WAke dnl dn2 **TIme** hhmm **<CR>**

To enter the next wake-up call, simply enter the DN and the time.

To delete a wake-up call:

SEt WAke dn **TIme OFf <CR>**

To change the time of a wake-up call, simply type the command with the new time.

Operating parameters

You must use Tlme in the command for either one DN or a group of DNs.

Use a 24-hour clock to give the time (hhmm). For example, type in 7:15 am as 715 and 2:30 pm as 1430.

You cannot make a wake-up call entry for the current five-minute period or for a time more than 23.5 hours in advance. If the time you type is not allowed, a message AWU TIME? giving the allowed time range will appear.

Each five-minute interval of the day has room for 100 (or 500, depending on your system) wake-up calls. If the interval containing the time you typed is full, you will receive a message like the following, indicating the five-minute interval 7:00–7:04 is full.

WAKE UP 7:00 FULL 6:55 100 7:05 85 STOP ON 2314

6:55 100 7:05 85 shows the amount of room remaining in the intervals five minutes before and after 7:00. At 6:55, in this case, there are 100 spaces remaining and at 7:05 there are 85. You can choose one of these intervals.

STOP ON 2314 indicates the DN the system did not accept because of lack of space. If you entered a group of DNs, DN 2314 is the first of those that are still not recorded in the system.

Table 11
Using the Set command for Automatic Wake Up

Input (what you type) Response (what the terminal displays)					Comments (what happens)
SEt WAke 1402 TIme 715					
WAKE UP	1402	NONE	TO	7:15	Wake-up call for one DN, DN 1402, will be called at 7:15 am. NONE shows there was no previous entry.
SEt WAke 3405 3409 TIme 800					Wake-up call for a group of DNs
WAKE UP	3405	NONE	TO	8:00	DNs 3405 to 3409 will be called at 8:00 am. Note that DN 3406 had a previous entry for 7:30, which has been changed to 8:00. The others had no previous entry (NONE).
WAKE UP	3406	7:30	TO	8:00	
WAKE UP	3407	NONE	TO	8:00	
SEt WAke 23105 TIme 715					Wake-up calls for a list of DNs
17804 **12642** **30441** **11018**	**700** **645**				DN 23105 will be called at 7:15. DN 17804 will be called at 7:00. Since the next two entries are also for 7:00, you can leave the time out. DN 11018 will be called at 6:45. Note that this example shows only the input you type, as if the "confirm" option is turned off (see "Define options for the Set command" on page 26).

Set time for a secondary wake-up announcement

You may set the time at which a second recorded wake-up announcement is activated.

SEt OPtion TIme RAn2 time1 time2 **<CR>**
If you do not put in any value for time2, then 00:00 (midnight) will be assumed.

If the second time is earlier than the first, for example:

SEt OPtion TIme RAn2 2200 400 <CR>

then the time of the second recorded announcement will run through midnight to the next morning.

To turn this time range off:

SEt OPtion TIme RAn2 OFf <CR>

Set language identifiers for wake-up announcements

You may assign a two-letter identifier to each of the six possible recorded languages used to make wake-up calls. The two-letter code is used to identify each language used to record the wake-up announcement. When setting a room's language status, use the language number (0–5) or the two-letter identifier. Language numbers do not change, because they refer to the tape recorders that play the announcements.

To set the language identifier for a language number:

SEt OPtion LAnguage (language number) (id) **<CR>**

where:

(language number)	0–5
(id)	any two-character code that does NOT correspond to a command (first character MUST be a letter)

To change the language identifier, repeat step 1 or:

SEt OPtion LAnguage (old id) (new id) **<CR>**

To clear the language identifier:

SEt OPtion LAnguage (language number or identifier) **OFf <CR>**

Table 12
Example of the Set command for the LAnguage option

Input	Comments
SEt OPtion LAnguage 3 EN <CR>	Language number 3 set to EN for ENglish.
SEt OPtion LAnguage EN FR <CR>	Whichever language number that was set to EN is changed to FR for FRench.
SEt OPtion LAnguage 0 OFf <CR>	Language number 0 no longer has an identifier.

Find wake-up call times

You can use your terminal to find DNs that have wake-up call times set. The FInd command allows you to retrieve the wake-up call request for the lowest-numbered DN within the specified DN range with a wake-up call time set. To get the next one in the range, type the word FInd again.

To find one DN wake-up call time:

FInd WAke dn **<CR>**

To find the first DN wake-up call time in a group of consecutive DNs:

FInd WAke dn1 dn2 <CR>

To find the first DN wake-up call time in the whole system:

FInd WAke ALl <CR>

To find the next wake-up call time:

FInd <CR>

Operating parameters

If only one DN is entered, the FInd command will look for a DN with a wake-up call, starting with the DN requested and ending with the largest DN in the system. It will print the first one it finds.

If there are no wake-up calls set in the group requested, the message NO DATA FOUND is printed.

For a group of DNs, the second DN entered must be a higher number than the first.

A command containing the word FInd all by itself is valid only immediately following another FInd command which produced non-zero results (any result other than NO DATA FOUND).

Table 13
Examples of the Find command for Automatic Wake Up

Input Response			Comments
Find WAke 3040 WAKE UP	3040	7:00	One DN
Find WAke 9001 9200 WAKE UP	9014	6:40	A group of consecutive DNs, 9014 is the first DN in the group which has requested a wake-up call.
FInd WAke ALl WAKE UP	1030	7:15	All DNs, DN 1030 is the first DN with a wake-up call time set.
FInd WAKE UP	2019	6:45	DN 2019 is the next one.
FInd NO DATA FOUND			There are no more DNs with wake-up call times set.

Print wake-up call times

You can use your terminal to print the wake-up call time currently set for one or more guest rooms.

To print the setting for one DN:

(PRint) WAke dn **<CR>**

To print the settings for a group of consecutive DNs:

(PRint) WAke dn1 dn2 **<CR>**

To print the settings for all DNs:

(PRint) WAke ALl <CR>

Operating parameters

When retrieving the wake-up call times for a group of consecutive DNs, or for all DNs, only the DNs within the group that have requested a wake-up call will be included. If there were no DNs with wake-up calls in the range specified, the terminal prints NO DATA FOUND.

When specifying a group of DNs, the second DN entered must be a higher number than the first.

You can use X substitution in the DN. For example, **(PRint) WAke 12XX** prints DNs in the range 1200-1299 with wake-up call times set.

Typing four asterisks (****) will stop a job that is currently in progress at your own terminal (for example, a long printout you realize you don't need).

Table 14
Examples of the Print command for Automatic Wake Up

Input Response			**Comments**
(PRint) WAke 1279			One DN
WAKE UP	1279	7:00	DN 1279 has a wake-up call set for 7:00 am
(PRint) WAke 3700 3720			A group of consecutive DNs
WAKE UP	3702	6:30	
WAKE UP	3709	7:00	
WAKE UP	3714	7:15	
WAKE UP	3718	6:30	
(PRint) WAke ALl			All DNs
WAKE UP	1003	7:00	
WAKE UP	1229	6:45	
WAKE UP	2005	6:30	
WAKE UP	4137	6:15	

Print wake-up call map

A chart showing a count of all wake-up calls in each five-minute interval for every hour throughout the day is known as a wake-up map.

To print the wake-up call map:

(PRint) WAke MAp <CR>

To print the map at another terminal, put the two-character port ID of the terminal where you would like it printed: portID **WAke MAp <CR>**

Operating parameters

To automatically print this map every day at the same time, put this command in the automatic list. The map in Table 15 on page 62 shows a 24-hour day beginning at midnight. Each line is one hour in five-minute intervals. The number of calls in each five-minute period is shown. Date (23) and time printed are at the top.

Table 15
Wake Up call map example (Part 1 of 2)

(PRint) WAke MAp <CR>

WAKE UP 23 TIME 0:11

0:00	000	000	000	000	000	000	000	000	000	000	000	000
1:00	000	000	000	000	000	000	000	000	000	000	000	000
2:00	000	000	000	000	000	000	000	000	000	000	000	000
3:00	000	000	000	000	000	000	000	000	000	000	000	000
4:00	000	000	000	000	000	000	000	000	000	000	000	000
5:00	000	000	000	000	000	000	000	000	000	000	000	000
6:00	002	000	000	001	000	000	001	000	000	000	000	000
7:00	004	001	001	000	000	000	001	000	000	001	000	000
8:00	000	000	000	000	000	000	000	000	000	000	000	000
9:00	000	000	000	000	000	000	000	000	000	000	000	000
10:00	000	000	000	000	000	000	000	000	000	000	000	000
11:00	000	000	000	000	000	000	000	000	000	000	000	000
12:00	001	000	000	000	000	000	000	000	000	000	000	000
13:00	000	000	000	000	000	000	000	000	000	000	000	000

Table 15
Wake Up call map example (Part 2 of 2)

(PRint) WAke MAp <CR>

WAKE UP 23 TIME 0:11

14:00	000	000	000	000	000	000	000	000	000	000	000	000
15:00	001	000	000	000	000	000	000	000	000	000	000	000
16:00	000	000	000	000	000	000	000	000	000	000	000	000
17:00	000	000	000	000	000	000	000	000	000	000	000	000
18:00	001	000	000	000	000	000	000	000	000	000	000	000
19:00	000	000	000	000	000	000	000	000	000	000	000	000
20:00	000	000	000	000	000	000	000	000	000	000	000	000
21:00	001	000	000	000	000	000	000	000	000	000	000	000
22:00	000	000	000	000	000	000	000	000	000	000	000	000
23:00	000	000	000	000	000	000	000	000	000	000	000	000

Room Status

Contents

This section contains information on the following topics:

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Reference list

The following are the references in this section:

- *Features and Services* (553-3001-306)

Room Status (RMS) sets conditions on rooms, such as whether or not a room requires cleaning, or whether a room is occupied or vacant. Room Status is managed through the BGD.

All room phones are required to have Controlled Class of Service Allowed (CCSA).

> ***Note:*** SL-1 or digital telephones equipped with a Room Status key (RMK) and Digit Display can read and update the cleaning status of any guest room. This is not an option that needs to be set by terminal command. If such phones exist, they have access.

Software Release 16 adds Multi-Language Wake Up to the Room Status feature. MLWU allows up to six languages to be programmed on various RAN routes, to be played at a wake-up call request.

Software Release 17 adds two features that are implemented through RMS: VIP Automatic Wake Up (VAWU) and Maid ID. VAWU makes it possible to designate rooms as VIP so that guests can be awakened by a personal telephone call from an attendant rather than the RAN wake-up. Maid ID makes it easier to keep track of which maids clean which rooms.

> ***Note:*** Refer to the Automatic Wake Up section in this document and in the *Features and Services* (553-3001-306) for more details concerning the above features.

All occupied rooms can be automatically set to cleaning requested at the same time each day. Off hook detection of cleaning status can also be set for all occupied rooms for the same time each day.

> ***Note:*** The Off-Hook Alarm Security feature takes precedence over the Off-Hook Detection feature. If a set is defined with the Alarm Security Allowed CLS (ASCA), the Off-Hook Detection feature will not operate.

Rooms can be classified by category (1–15) to identify locations, price range, size, facilities, and so on. Each room can be in only one category.

Table 16
Room status examples

Guest Registration and Occupancy	CH (IN)	check-in
	CH OU	check-out
	OC	occupied
	VA	vacant
Cleaning Status (includes Maid ID)	RE	cleaning requested
	PR	cleaning in progress
	CL	cleaned
	PA	cleaning passed inspection
	FA	cleaning failed inspection
	SK	cleaning skipped
Sale Status	SA	ready for sale
	NS	not for sale
Other Status Information	CO	Controlled Class of Service (CCOS)
	CO OF	System Class of Service (SCOS)
	E1	Enhanced Controlled Class of Service 1
	E2	Enhanced Controlled Class of Service 2
	MW	Message Waiting Lamp
	DN	Do Not Disturb
	CA	category (see Assign Guest Room Categories)
	LA	language for Automatic Wake Up
	VI	VIP status for Automatic Wake Up
	TL	telephone check

Set room status

You can use your terminal to change the status of guest room DNs to checked-in. This can be done for a single DN, a group of consecutive DNs, or all DNs. Use the abbreviations listed in Table 16, "Room status examples," on page 67 in place of the word "status" in these commands.

To set the room status of one DN:

SEt STatus dn status **<CR>**

To set room status of a group of consecutive DNs:

SEt STatus dn1 dn2 status **<CR>**

To set room status of all DNs:

SEt STatus ALl status **<CR>**

To set a second nonconsecutive DN to the same status, simply type the **DN** and **<CR>**. If you have a list of nonconsecutive DNs, you can repeat many times.

To set the language of one DN:

SEt STatus dn LAnguage number or ID **<CR>**

Operating parameters

When checking in a group of consecutive DNs, the second DN entered must be a higher number than the first.

After setting the status of one or more guest room DNs, a confirmation message may be displayed or printed. If the "confirm" option is off, the updated status is not automatically displayed or printed (see "Define options for the Set command" on page 26).

You may not be able to use the SET command with all DNs, with a group of consecutive DNs, or with X substitution, if any of these options are turned off (see "Define options for the Set command" on page 26).

Languages are numbered from 0–5. Two-letter identifiers may be set using the SEt OPtion command (see "Set language identifiers for wake-up announcements" on page 57).

Set VIP status to ensure that an important guest receives a personal wake-up greeting from the attendant.

Guest registration and occupancy parameters

Rooms must meet sale criteria to be able to be checked-in; that is, they must have the status VAcant and PAssed inspection.

The occupancy status of a room is automatically changed to OCcupied when you set the status to CHecked-IN, or to VAcant when you set the status to CHecked-OUt. Manually setting any other room status of a DN does not affect the current settings of other aspects of room status, such as guest room telephone Class of Service or cleaning status.

The CHeck-IN and OUt commands can also be set to perform other tasks automatically (see "Set check-in, check-out parameters" on page 77). If this is not desirable, you can enter any of this information manually.

The CHecked-IN status is not indicated in a status printout. Checked-in status is inferred from the OCcupied status.

The CHecked-OUt status is not indicated in a status printout. Checked-out status is inferred from the VAcant status.

Cleaning status parameters

If automatic cleaning hours are set, the status of any occupied guest room will be changed to cleaning REquested at the specified time (see "Set automatic control of room cleaning status" on page 74).

If automatic detection hours are set, the status of any occupied guest room will be automatically updated to cleaning in PRogress, then CLeaned by the cleaning staff using the room telephone in the appropriate manner (see "Set automatic control of room cleaning status" on page 74).

If you use Maid IDs, you can append the Maid ID to a room's cleaning status from the BGD, or the maid can send it from the guest room telephone when the cleaning status is changed.

The Maid ID is a one- to four-digit number that should be unique for each member of the cleaning staff. The Maid ID appears only on Room Status Display messages, so you must have display messages for room status turned on at one of your terminals to keep a record of the Maid ID.

To include the Maid ID in a room status Set command:

SEt STatus dn status **MI** xxxx **<CR>**

where xxxx is the one- to four-digit Maid ID number.

Note: The Maid ID can only be included with a SEt command that changes a room's cleaning status.

Class of Service

By changing a telephone's Class of Service, you can restrict guests from making certain types of calls. There are four levels of restrictions available.

- SCOS (CO OF) (Specified as CO OF in commands.)
- CCOS (Specified as CO in commands.)
- E1
- E2

System Class of Service (SCOS) is the basic default level and usually has the fewest restrictions.

Controlled Class of Service (CCOS) is used to restrict the type of calls a guest can make from the telephone.

Enhanced Controlled Class of Service (El and E2) simply adds two more levels of restrictions to increase the flexibility of your system.

For example, a telephone with SCOS is allowed to make toll and Central Office calls as well as room-to-room calls, while a telephone placed in CCOS can only make room-to-room calls. Toll and Central Office calls are not allowed.

Your Class of Service restrictions may vary from this example. Check with your System Administrator if your are not sure of your Class of Service restrictions.

Table 17
Using the Set command for Room Status

Input	Comments
	One DN:
SEt STatus 1203 CHeck(IN) <CR>	checked-in
SEt STatus 0904 CHeck OUt <CR>	checked-out
SEt STatus 1427 OCcupied <CR>	occupied
SEt STatus 2218 VAcant <CR>	vacant
SEt STatus 4442 REquested <CR>	cleaning requested
SEt STatus 4443 CLeaned MI 14 <CR>	cleaned by maid with ID number 14
SEt STatus 1243 SAle <CR>	ready for sale
SEt STatus 2234 COntrol <CR>	Controlled Class of Service
SEt STatus 2236 COntrol OFf <CR>	System Class of Service
SEt STatus 1208 LAnguage 2 <CR>	language number 2
SEt STatus 1209 LAnguage SP <CR>	language Spanish
SEt STatus 1405 VIp <CR>	VIP (personal wake-up call)
SEt STatus 3322 CHeck OUt <CR> **3328 <CR>** **3342 <CR>** **3563 <CR>** **4788 <CR>**	A groups of nonconsecutive DNs all checked out.
SEt STatus 4402 4408 COntrol <CR>	A group of consecutive DNs using inclusive DN range.
SEt STatus 22XX SKipped <CR>	A group of consecutive DNs using X substitution (2200 to 2299).
SEt STatus ALl PRogress <CR>	All DNs cleaning in progress.

Set ready-for-sale criteria

A Room Status SEt command using the word SAle will always change the status of the room(s) you specify to VAcant and PAssed. But you may wish to make the PRint and FInd commands less strict, so that more rooms are printed out as being available for sale.

All the possible criteria you can add are listed here.

REquested
PRogress
CLeaned
FAiled
SKipped
OCcupied

To set ready-for-sale criteria:

SEt OPtion SAle state(s) **(ON) <CR>**

To turn off, use the word OFf instead of ON. You can use any states you require in the command. The word ON or OFf must come at the end, and you cannot turn items on and off in the same line.

> ***Note:*** If you do not include any states in the command, all six items will be turned on or off. For example, **SEt OPtion SAle ON <CR>** will set all six items in the list on. (The word ON is not optional in this case.)

To see what ready for sale criteria are currently set (look for the word SALE in the reply):

(PRint) OPtion <CR>

For example, you wish to include rooms with cleaning in PRogress or CLeaned status in the rooms for sale printout:

SEt OPtion SAle PRogress CLeaned (ON) <CR>

Then when you use the command **PRint STatus ALl SAle <CR>,** the reply will include all rooms that have status PRogress and CLeaned, as well as VAcant and PAssed. The command **SEt STatus 1205 SAle** will still change the status of that room to VAcant and PAssed.

Set automatic control of room cleaning status

Room cleaning status can be updated in two ways: automatically or by code entry from the room telephone. The status of all occupied rooms can be automatically changed to cleaning REquested every day at a particular time. Between the hours that you specify, cleaning staff can use the room telephone to signal that the room is being cleaned. When the room telephone handset is picked up and left off hook, the cleaning status will be changed to cleaning in PRogress. When the handset is replaced, the room's status will be changed to CLeaned (no Maid ID is sent). See "Set cleaning status from room telephone" on page 75 for other methods the cleaning staff can use to change a room's cleaning status.

To set the off hook detection period and the automatic change of status to cleaning REquested:

SEt OPtion TIme DEtect hour1 hour2 **<CR>**

At hour1, all occupied rooms will be set to cleaning REquested. Between hour1 and hour2, cleaning status changes are detected from room telephones.

Note: Use a 24-hour clock. Hour2 must be greater than hour1. If no hour2 is typed, midnight will be assumed.

To set the automatic change of occupied rooms to cleaning REquested:

SEt OPtion TIme REquest hour1 **<CR>**

To cancel off hook detection:

SEt OPtion TIme DEtect OFf <CR>

Note: This cancels off hook detection only. It does not affect the automatic change of cleaning status to cleaning REquested at the hour1 that was originally entered.

To turn off the automatic change of cleaning status of all occupied rooms to cleaning REquested:

SEt OPtion TIme REquest OFf <CR>

To find out which times, if any, are currently set (look for TIME DETECT and REQUEST in the reply):

(PRint) OPtion <CR>

Set cleaning status from room telephone

In addition to off hook detection, there are two ways the cleaning status of a room can be changed by the cleaning staff.

Dial access

Cleaning staff can update the status of a room by dialing a SPRE code from the room telephone. The SPRE (Special Prefix) code is a one- or two-digit code that your system administrator can provide for you. To allow this, type:

SEt OPtion TIme DIal (ON) <CR>

To disallow, use OFf in place of ON.

To change a room's cleaning status from the room telephone, use the following procedure:

1 Lift the handset and dial SPRE + 86, or Flexible Feature Code (FFC RMST).

2 Using the dial pad, enter the one-digit cleaning code as follows:

1 = cleaning requested
2 = cleaning in progress
3 = room cleaned
4 = passed inspection
5 = failed inspection
6 = cleaning skipped
7 = not for sale

If you hear a regular dial tone, you are finished. If you hear a special tone, the system is asking for the Maid ID. To enter the Maid ID:

3 Dial * followed by the one- to four-digit Maid ID number. If you make a mistake, press * and reenter the Maid ID.

4 Dial #.

5 Hang up when the room is cleaned.

Note 1: The Maid ID is recorded only in Room Status display messages. If no Maid ID is entered, the BGD has no record of the maid.

Note 2: A room telephone can change only its own status. To change the status of other rooms, you must use a Room Status key on the telephone.

Key access

Your system may have telephones equipped with a Room Status key (RMK). These can update the cleaning status of other rooms. You cannot turn this option on and off, but you can choose whether or not to have such changes displayed (see "Display room status events" on page 41).

1 Press the RMK and dial the Directory Number of the room to be changed.

2 Using the dial pad, enter the one-digit cleaning code as follows:

1 = cleaning requested
2 = cleaning in progress
3 = room cleaned
4 = passed inspection
5 = failed inspection
6 = cleaning skipped
7 = not for sale

To enter the Maid ID (if required):

3 Dial * followed by the one- to four-digit maid ID number. If you make a mistake, press * and reenter the maid ID.

4 Press the RMK key to end the procedure.

Note: The maid ID is recorded only in Room Status display messages. If no maid ID is entered, the BGD has no record of the maid.

Set check-in, check-out parameters

Options you can set allow the check-in and check-out commands to perform a number of operations automatically.

The following options are associated with the Room Status feature.

COntrol	System Class of Service upon check-in, Controlled Class of Service upon check-out
El / E2	Enhanced Controlled Class of Service (1 or 2) upon check-in, Controlled Class of Service Restriction level upon check-out
DNd	Automatic cancellation of Do-Not-Disturb upon check-out
LAnguage	Reset language to zero (0) upon check-out
MWl	Message Waiting lamp turned off upon check-out
REquest	Automatic cleaning request upon check-out
SLl	Allow use of SL-1 or digital telephone Controlled Class of Service (CCOS) key for check-in and -out
TL	Verify set is connected (BAD LAMP message is printed if a set checked with the TL command is disconnected)
WAke	Cancellation of Automatic Wake Up calls upon check-out
VIp	Remove VIP status upon check-out

Use the abbreviations listed above in place of "item" in the commands listed below.

To set check-in, check-out parameters:

SEt OPtion CHeck item **(ON) <CR>**

To set more than one option at the same time:

SEt OPtion CHeck item **(ON) <CR>**

To remove a check-in/check-out status option:

SEt OPtion CHeck item **OFf <CR>**

Operating parameters

Items cannot be set on and off in the same command, and the word ON or OFf always comes at the end.

Once you have activated automatic Class of Service control, the telephone Class of Service of a guest room DN is automatically set to SCOS when the guest is checked in with the CH command. Guest check-out automatically sets the Class of Service back to CCOS. If this is not desirable, guest room DN Class of Service can be set manually from the terminal.

Assign guest room categories

Guest rooms can be classified by category to identify location, price range, facilities, and so on. A room can be assigned only one category. Each category is given a number in the range 1–15 (0 = no category) and can also be given a four-letter name. The name or number can then be used in requesting printouts of rooms with particular features. For example, **(PRint) STatus ALl VAcant KTCH <CR>** could be used to provide a list of all vacant rooms with kitchen facilities.

To set a room to a particular category number:

SEt STatus dn **CAtegory** n **<CR>**

where n is a number in the range 1–15.

To set a group of rooms to a category number (consecutive group):

SEt STatus dn1 dn2 **CAtegory** n **<CR>**

To set a group of rooms to a category number (X substitution):

SEt STatus dnx **CAtegory** n **<CR>**

To give a category a four-letter name:

SEt OPtion CAtegory n name **<CR>**

where n is the category number, and name is the category name (1 to 4 letters).

To change the name:

SEt OPtion CAtegory oldname newname **<CR>**

To remove a category name without replacing it with a new name, use zero as the new name:

SEt OPtion CAtegory name 0 **<CR>**

Find current room status

You can use your terminal to find the current status of guest rooms. The FIND command allows you to retrieve one DN at a time. If you include a particular status in your command, you can search for DNs with the status you have named. After you have retrieved one DN by typing the full command, you can find the next one simply by typing FInd.

To find the status of one DN:

FInd STatus dn **<CR>**

To find the status of the first DN in a group of consecutive DNs:

FInd STatus dn1 dn2 **<CR>**

To find the status of the first DN in the whole system:

Find STatus ALl <CR>

You may add a status condition at the end of any of the commands above. For a group of consecutive DNs, the command would be **FInd STatus** dn1 dn2 status. Then only DNs with the status you name will be retrieved.

To find the next one, type word **FInd** and **<CR>**.

Operating parameters

If you enter a FInd command with only one DN init and you do not name any status condition, that DN's status will be printed.

If you enter only one DN and you name a status, the FInd command will begin looking for a DN with that status, starting at the DN entered and ending with the largest DN in the system. It will print the first one it finds.

For a group of DNs, the second DN entered must be a higher number than the first.

If there is no DN in the range you specify with the status you name, the message NO DATA FOUND is printed.

The word FInd all by itself is valid only immediately after a FInd command which produced non-zero results (any result other than NO DATA FOUND).

Table 18
Using the Find command for Room Status (Part 1 of 2)

FInd STatus 1143 <CR>								
STATUS	1143	OCC	REQD	UNR			CAT: 5	LANG: 0
One DN								
FInd STatus 2401 2403 <CR>								
STATUS A range of DNs.	2401	OCC	REQD	UNR	MWL		CAT:	LANG: 0
FInd <CR>								
STATUS	2402	VAC	PASS	COS	MWL		CAT:	LANG: 0
FInd <CR>								
STATUS	2403	VAC	CLND	COS	MWL	SALE	CAT:	LANG: 0
FInd STatus 3200 3205 VAcant <CR>								
STATUS	3200	VAC	REQD	COS			CAT:	LANG: 0

Table 18
Using the Find command for Room Status (Part 2 of 2)

A group of consecutive DNs—find vacant rooms. 3200 is the first vacant room in the group.
FInd <CR>
STATUS 3201 VAC PASS COS SALE CAT: LANG: 0 VIP
3201 is the next vacant room. It is also a VIP room.
FInd <CR>
STATUS 3204 VAC CLND COS SALE CAT: LANG: 0
3204 is the next vacant room.
FInd <CR>
NO DATA FOUND
There are no other vacant rooms in this group.

Print current room status

You can use your terminal to print the status of a guest room DN. This can be done for a single DN, a group of consecutive DNs, or all DNs. If you include a particular status in your command, the output shows only those rooms with the status requested. If you do not include any status in your command, the status of all requested rooms is printed.

For one DN:

(PRint) STatus dn **<CR>**

For a group of consecutive DNs:

(PRint) STatus dn1 dn2 status **<CR>**

For all DNs:

(PRint) STatus ALl status **<CR>**

Operating parameters

You can specify any of the following status indications:.

SA	ready for sale
NS	not for sale
OC	occupied
VA	vacant
RE	cleaning requested
PR	cleaning in progress
CL	cleaned
PA	passed inspection
FA	failed inspection
SK	cleaning skipped
CO	Controlled Class of Service
CO OF	System Class of Service
E1	Enhanced Controlled Class of Service 1
E2	Enhanced Controlled Class of Service 2
DN	Do Not Disturb
DN OF	Do Not Disturb off
MW	Message Waiting Lamp on
MW OF	Message Waiting Lamp off
CA n	category (either number or name)
LA n	language number
LA id	language identifier
VIp	VIP (personal wake-up call)
TL	telephone check

You can use X substitution. For example 120X refers to DN 1200 to 1209.

When you set a DN to SAle, it is always set to VAcant and PAssed. However, when you print rooms with SAle status, you may get rooms in other conditions as well, because the criteria for printing rooms available for sale can be altered.

Typing four asterisks (****) will stop a job currently in progress at your own terminal (for example, a long printout you realize you don't need).

After some system problems, blocks of asterisks (*) characters may be printed in the occupancy and cleaning fields to show they are no longer valid. If this happens, enter the missing status information.

Table 19
Using the Print command for Room Status

(PRint) STatus 1206 <CR>
STATUS 1206 VAC CLND COS SALE CAT: LANG: 0 VIP AT 12:00
One DN—the current status of DN 1206 is printed.
(PRint) STatus 1200 1233 SA <CR>
STATUS 1202 VAC PASS COS SALE CAT: LANG: 0 AT 2:30
STATUS 1207 VAC CLND COS SALE CAT: LANG: 0 AT 10:06
STATUS 1214 VAC PASS COS SALE CAT: LANG: 0 AT 1:45
A group of consecutive DNs with SALE status—all those with SALE status are printed.
(PRint) STatus 8000 8004 <CR>
STATUS 8000 VAC NSAL COS CAT: LANG: 0 AT 12:00
STATUS 8001 OCC CLND UNR MWL CAT: LANG: 0 AT 12:02
STATUS 8002 OCC SKIP FRE DND CAT: LANG: 0 AT 4:10
STATUS 8003 OCC REQD UNR MWL CAT: LANG: 0 AT 2:20
STATUS 8004 VAC PROG COS CAT: LANG: 0 AT 12:09
A group of consecutive DNs—the current status of all DNs in the group is printed.
(PRint) STatus ALI VA <CR>
STATUS 1106 VAC PASS COS SALE CAT: LANG: 0 AT 5:36
STATUS 2214 VAC NSAL COS CAT: LANG: 0 AT 1:08
All DNs—all DNs with VACANT status are printed.
(PRint) STatus ALI <CR>
STATUS 1001 VAC PASS COS SALE CAT: LANG: 0 AT 2:50
STATUS 1002 OCC REQD UNR MWL CAT: LANG: 0 AT 11:01
All DNs are printed.

Message Registration

Contents

This section contains information on the following topics:

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Reference list

The following are the references in this section:

- *Features and Services* (553-3001-306)

Message Registration allows hotel management to monitor all completed local calls made from the hotel telephone system. Each DN and trunk in your system can have a meter assigned, which stores a pulse count for calls made. You can access these meters using your terminal.

Outgoing calls from guest room telephones are usually monitored for billing and other administrative purposes. Meters can also be assigned to any administration telephones and trunks the hotel management wishes to monitor.

Any pulses the system cannot assign to a particular DN or trunk meter are accumulated in the customer meter. This meter can be accessed using your terminal just as the others can, but it cannot be turned off.

The commands you need to retrieve, alter, or print the contents of the meters in your system are explained in this section. Any reply to your Message Registration commands will identify the type of meter concerned: administration (ADMN) or guest room (ROOM) telephone, Attendant Console (ATTN), trunk (TRK), or the customer meter (CUST).

You can turn meters on and off as required (see "Turn meters on and off" on page 93). You can also get a continuous printout or display of Message Registration changes as they occur.

Refer to *Features and Services* (553-3001-306) for more information regarding Message Registration.

Set meters to a given value

You can use your terminal to set meters in your Meridian 1 system to any given value. You can use meter values to figure total call charges for metered calls. You can set meter values for a single DN, a group of consecutive DNs, or all DNs.

To set the meter for one DN:

SEt MEter dn **VAlue** n **<CR>**

To set the meters for a group of consecutive DNs:

SEt MEter dn1 dn2 **(VAlue)** n **<CR>**

To set the meters for all DNs:

SEt MEter ALl (VAlue) n **<CR>**

To enter the next meter change you want to make, you can type in the DN and the value you want. Just enter dn n **<CR>**.

To change the value of the Customer meter:

SEt MEter CUstomer (VAlue) n **<CR>**

Operating parameters

When setting the meters for a group of consecutive DNs, the second DN entered must be a higher number than the first and can be in the range 0–32766.

You can use X substitution (see "Define options for the Set command" on page 26). For example, **SEt MEter 32X VAlue 1** will set all the meters 320–329 to the value 1.

The response shown in the examples appears only if the COnfirm option is on (see "Define options for the Set command" on page 26).

You may not be able to SEt all DNs at once if the ALl option is not on (see "Define options for the Set command" on page 26).

You may not be able to SEt a group of consecutive DNs if the RAnge option is not on (see "Define options for the Set command" on page 26).

Using DN and VAlue only to enter a list of meter changes, as in Step 3, is valid only immediately following a SEt MEter command.

The word VAlue is required for one DN, but is optional in other cases.

Table 20
Using the Set command for Message Registration

Input Response	**Comments**
SEt MEter 1535 VAlue 1	Meter for one DN
ROOM METER 1535 7 TO 1	DN 1535 was set to 7 but is now set to one.
SEt MEter 1500 1504 (VAlue) 1	Meters for a group of consecutive DNs
ROOM METER 1500 DISP ZERO TO DISP 1	
ROOM METER 1501 DISP 1 TO DISP 1	DN 1501 was set to one and is unchanged.
ROOM METER 1502 DISP ZERO TO DISP 1	
ROOM METER 1503 DISP ZERO TO DISP 1	
ROOM METER 1504 DISP 6 TO DISP 1	DN 1504 was set to 6 but is now set to one.
SEt MEter ALl (VAlue) 1	Meters for all DNs
ROOM METER 1000 ZERO TO 1	
ROOM METER 1001 2 TO 1	
ROOM METER 1002 ZERO TO 1	
SEt MEter 1206 VAlue 2	See Note
1308 3	
1596 2	
1823	
1906	
1972 1	
1986 0	

Note: Meters for a list of DNs—DN 1308 is going to be set to three, and DN 1596 to two. Since DN 1823 and DN 1906 have no value typed beside them, the last value input, two, will be used. If the meter value you want for the next line is the same, you can leave it out. So DN 1823 and 1906 will also be set to two. Since the meter value desired for DN 1972 is different, it must be entered. When entering values in a list like this, use 0 rather than ZEro (see last line). Note that this example shows only the input you type, as if the confirm option is turned off (see "Define options for the Set command" on page 26).

Erase meters (set to zero)

You can use your terminal to set meters in your system to zero. You can do this for a single DN, a group of consecutive DNs, or all DNs.

To set the meter for one DN to zero:

SEt MEter dn **ZEro <CR>**

To set the meters for a group of consecutive DNs to zero:

SEt MEter dn1 dn2 **ZEro <CR>**

To set the meters for all DNs to zero:

SEt MEter ALl ZEro <CR>

To set the Customer meter to zero:

SEt MEter CUstomer ZEro <CR>

To add the Customer meter to the end of a command, which sets other meters to zero:

SEt MEter 1206 ZEro CUstomer ZEro <CR>

Operating parameters

You can use X substitution (see "Define options for the Set command" on page 26).

You may not be able to SEt all DNs at once if the ALl option is not on (see "Define options for the Set command" on page 26).

You may not be able to SEt a group of consecutive DNs if the RAnge option is not on (see "Define options for the Set command" on page 26).

All meters specified in the command are printed out, even if they were already set at zero.

When erasing the meters for a group of DNs, the second DN entered must be a higher number than the first.

The response shown in the examples appears only if the COnfirm option is on (see "Define options for the Set command" on page 26).

VAlue 0 can be used instead of ZEro if you wish.

Table 21
Using the Set command to erase meters

Input Response					**Comments**
SEt MEter 1432 ZEro <CR>					Meter for one DN
ROOM METER	1432	DISP	3	TO DISP ZERO	DN 1432 was set to 3 but is now set to zero.
SEt MEter 1400 1410 ZEro <CR>					
ROOM METER	1400	DISP	2	TO DISP ZERO	DN 1401 was set to 2 but is now set to zero. The others were set to 1 but are now set to zero.
ROOM METER	1401	DISP	1	TO DISP ZERO	
ROOM METER	1402	DISP	1	TO DISP ZERO	
	•				
	•				
ROOM METER	1410	1		TO ZERO	
SEt MEter ALl ZEro <CR>					Meter for all DNs
ATTN METER	1000	ZERO		TO ZERO	DN 1000 was set to 0 and is unchanged.
ROOM METER	1002	1		TO ZERO	DN 1001 was set to 1 but is now set to zero.
	•				
	•				
ROOM METER	1005	3		TO ZERO	DN 1005 was set to 3 but is now set to zero.
ROOM METER	1006	10		TO ZERO	DN 1006 was set to 10 but is now set to zero.

Turn meters on and off

You can use your terminal to turn a meter or a group of meters on or off.

To turn the meter for one DN off:

SEt MEter dn **OFf <CR>**

For a group of consecutive DNs:

SEt MEter dn1 dn2 **OFf <CR>**

To turn off meters for all DNs:

SEt MEter ALl OFf <CR>

To turn a meter back on:

SEt MEter dn **ON <CR>**

Operating parameters

When turning the meters for a group of consecutive DNs on or off, the second DN entered must be a higher number than the first.

You can use X substitution if it is allowed (see "Define options for the Set command" on page 26). For example, **SEt MEter 2X1 OFf** turns off 201, 211, 221, 231, and so on.

The response shown in the first example appears only if the COnfirm option is on (see "Define options for the Set command" on page 26).

You may not be able to SEt all DNs at once if the ALl option is not on (see "Define options for the Set command" on page 26).

You may not be able to SEt a group of consecutive DNs if the RAnge option is not on (see "Define options for the Set command" on page 26).

The CUstomer meter cannot be turned off.

Table 22
Using the Set command to turn meters on or off

Input Response	**Comments**
SEt MEter 10579 OFf <CR> ROOM METER 1059 DISP 14 TO OFF	Meter for one DN DN 1059 will now be turned off.
SEt MEter 4706 ON <CR>	DN 4706 will now be turned on.
SEt MEter 3001 3501 OFf <CR>	Meters for a group of consecutive DNs DN 3001 to 3501 will now have their meters turned off.
SEt MEter ALl OFf <CR>	Meters for all DNs All DNs will now have their meters turned off.

Turn individual meter display on and off

Individual meters can have their display turned on or off, so it is possible to have the meter value for a particular DN displayed whenever a change occurs, and later turn display off for that DN if no longer required.

Note that in order to display any meter changes at all, the system display option must be on.

To turn on the display for one DN:

SEt MEter dn **DIsplay (ON) <CR>**

To turn on the display for a group of consecutive DNs:

SEt MEter dn1 dn2 **DIsplay (ON) <CR>**

To turn on meter display for all DNs:

SEt MEter ALl DIsplay (ON) <CR>

To turn on display for the Customer meter:

SEt MEter CUstomer DIsplay (ON) <CR>

To turn off display of meter changes, simply use OFf instead of ON.

Operating parameters

For a group of consecutive DNs, the second DN entered must be a higher number than the first.

You may not be able to SEt all DNs at once if the ALI option is not on (see "Define options for the Set command" on page 26).

You may not be able to SEt a group of consecutive DNs if the RAnge option is not on (see "Define options for the Set command" on page 26).

You can use X substitution if it is allowed (see "Define options for the Set command" on page 26). For example, **SEt MEter X01 DIsplay OFf** will turn off meter display for DN 1001, 2001, 3001, 4001, ... 9001.

You can combine this command with setting a meter value by putting DIsplay ON, or OFf, at the end. For example, **SEt MEter 1023 VAlue 10 DIsplay OFf** will set the value of DN 1023's meter to 10 and turn off the display of meter changes for DN 1023. Do not combine it with turning a meter on or off.

Table 23
Using the Set command to turn display of meters on or off

SEt MEter 2703 DIsplay (ON) <CR>	Meter for one DN—display turned on for DN 2703.
SEt MEter 5001 5035 Display OFf <CR>	Meters for a group of consecutive DNs—display turned off for DN 5001 to 5035.
SEt MEter ALI Display (ON) <CR>	Meters for all DNs—display turned on for all DNs.

Find non-zero meters

You can use your terminal to search for meters in your system that have a reading greater than zero. Only the first non-zero meter encountered in the range you specify is printed out. To get the next one, you simply type FInd again.

To find the meter value for one DN:

FInd MEter dn **<CR>**

To find the first non-zero meter value for a group of consecutive DNs:

FInd MEter dn1 dn2 **<CR>**

To find the first non-zero meter value for all DNs:

FInd MEter A Ll <CR>

To find the next non-zero meter:

FInd <CR>

Operating parameters

If only one meter is requested, and its value is zero, the first higher numbered DN with a non-zero meter will be printed.

When searching a group of meters, the second DN entered must be higher than the first.

If there are no non-zero meters in the group, the terminal prints NO DATA FOUND.

A command containing FInd all by itself is valid only immediately following another FInd command that resulted in a non-zero meter (any result other than NO DATA FOUND).

Table 24
Using the Find command to find non-zero meters

Input Response				Comments
FInd MEter	**3004 <CR>**			Meter for one DN
ADMN METER	3004	DISP	8	DN 3004 has a non-zero meter.
FInd MEter	**9001**	**9025 <CR>**		Meters for a group of consecutive DNs
ROOM METER	9015		23	DN 9015 is the first DN in the group with a non-zero meter.
FInd MEter ALl <CR>				Meters for all DNs
ROOM METER	1003	DISP	13	DN 1003 is the first DN with a non-zero meter.
FInd <CR>				
ROOM METER	4035		6	DN 4035 is the next DN with a non-zero meter.
FInd <CR>				
NO DATA FOUND				There are no more non-zero meters.

Print meter values

You can use your terminal to print the contents of meters in your system. This can be done for a single DN, a group of consecutive DNs, or all DNs.

To print the meter contents for one DN:

(PRint) MEter dn **<CR>**

To print the meter contents for a group of consecutive DNs:

(PRint) MEter dn1 dn2 **<CR>**

To read the meters for all DNs:

(PRint) MEter ALl <CR>

To print the Customer meter value:

(PRint) MEter CUstomer <CR>

The word CUstomer can also be added at the end of a command to print other meters, for example:

(PRint) MEter ALl CUstomer <CR>
(PRint) MEter 7301 7350 CUstomer <CR>

Operating parameters

When reading the meters for a group of consecutive DNs, the second DN entered must be a higher number than the first.

Any DN in the group that has not been assigned a meter, or has a meter reading of zero, will not be printed. But if you asked for only one meter, and it was turned off or had a value of zero, it will be printed.

You can use X substitution (see "Define options for the Set command" on page 26). For example

(PRint) MEter 73XX <CR>

will print meters 7300-7399.

Typing four asterisks (****) will stop a job currently in progress at your terminal (for example, a long printout you realize you don't need).

You can specify a condition at the end of the PRINT command. Only meters in the condition you name will be printed. The conditions are listed below.

OFf	meters that are turned off
ZEro	meters with a reading of zero
ALl	meters in all conditions, including zero value, and turned off (normally these are not printed)
DIsplay ON	meters with their display turned on
DIsplay OFf	meters with their display turned off

For one meter:

(PRint) MEter dn condition **<CR>**

For a consecutive group of meters:

(PRint) MEter dn1 dn2 condition **<CR>**

For all meters:

(PRint) MEter ALl condition **<CR>**

Table 25
Using the Print command for Message Registration (Part 1 of 2)

Input Response				**Comments**
(PRint) MEter 9036 <CR>				Meter for one DN
ROOM METER	9036		3	The current meter value of DN 9036 is 3.
(PRint) MEter 1400 1420 <CR>				Meters for a group of consecutive DNs
ROOM METER	1402	DISP	1	The current meter value of DN 1402 is 1.
ROOM METER	1408	DISP	3	The current meter value of DN 1408 is 3.
ROOM METER	1412	DISP	6	The current meter value of DN 1412 is 6.
ROOM METER	1418	DISP	2	The current meter value of DN 1418 is 2.

Table 25
Using the Print command for Message Registration (Part 2 of 2)

Input Response				**Comments**
(PRint) MEter ALl <CR>				Meters for all DNs
ADMN METER	1006	DISP	3	The current meter value of DN 1006 is 3. DN 1006 is an administration (ADMN) telephone. The rest are guest room (ROOM) telephones.
ROOM METER	1018		10	The current meter value of DN 1018 is 10.
ROOM METER	1021	DISP	2	The current meter value of DN 1021 is 2.
ROOM METER	1026		1	The current meter value of DN 1026 is 1.
(PRint) MEter 383 <CR>				A trunk meter
TRK METER	383		17	383 is a trunk (TRK). Its current meter value 17.
(PRint) MEter ALl OFf <CR>				All meters that are turned off.
ROOM METER	1206	OFF		
ROOM METER	1343	OFF		
ADMN METER	8946	OFF		
(PRint) MEter CUstomer <CR>				The Customer meter. The current value is 4832.
CUST METER		DISP	4832	Display is on.

Call Party Name Display

Contents

This section contains information on the following topics:

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Set room for Call Party Name Display information 104
Operating parameters 104
Print Call Party Name Display information 105
Operating parameters 105

Reference list

The following are the references in this section:

- *Features and Services* (553-3001-306)

Call Party Name Display (CPND) gives internal telephone users a visual aid when making and receiving calls. CPND provides information (usually a name) in addition to the DN or route/member number usually displayed. CPND applies only to M2317, M3000 telephones, Meridian Modular Telephones with display, and M1250/M2250 Attendant Consoles.

Call Party Name Display (CPND) information for telephones in guest rooms is constantly changing. In order to simplify changing this information, the associated guest identification (name and station category) may be added at check-in through the BGD.

You can also get a printout of the Call Party Name Display information for one or more rooms.

Refer to *Features and Services* (553-3001-306) for complete details regarding CPND.

Set room for Call Party Name Display information

To enter a Call Party Name Display name for a DN:

SEt CPnd dn "cpnd-name" (xpln) **LAnguage** lang **CHeck (IN) VIp <CR>**

where:
dn is the DN for a station set
"cpnd-name" is the new CPND name, up to 27 characters
(xpln) is the expected name length (optional)
lang is the language number or two-letter identifier
VIp identifies the guest as receiving a personal wake-up call

The information you enter overrides any other existing information associated with the defined DN. For example:

SEt CPnd 1241 "Ms. R.C. Brown" LAnguage EN VIp <CR>

Operating parameters

If the COnfirm option is on, the following confirmation message prints:

CPND dn cpnd-name xpln

The keywords SEt, CPnd, and LAnguage can be shortened to the first two letters.

The keywords CHeck (IN) / OUt, LAnguage (and its identifier) and VIp are optional.

If the names entered have more characters than the maximum allowed, an error message is printed and you must reenter the name with fewer characters.

If you do not specify the DN or if the DN is the wrong type, the command will be rejected with an error message BAD DN.

Print Call Party Name Display information

You can use your terminal to print the name associated with a particular DN or names associated with a group of DNs.

To print the name associated with a particular DN or names associated with a group of DNs:

PRint CPnd dn **<CR>**

where dn is the DN of a station telephone set or a range of DNs, such as dn1, dn2, dn3, and so on, or 2xx9, or AL1 for all defined DNs.

Operating parameters

If the COnfirm option is on, the following confirmation message prints:

CPND dn "cpnd-name" xpln

The keywords can be shortened to the first two letters. For example:

PR CP 1241 <CR>

Flexible Direct Inward Dialing

Contents

This section contains information on the following topics:

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Feature interactions 109
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Feature operation 112
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PMS messages sent to the Meridian 1 112

Reference list

The following are the references in this section:

- *Administration* (553-3001-311)

Prior to the introduction of the Flexible Direct Inward Dialing (FDID) feature, hotels were required to purchase a large number of DID numbers that matched the number of hotel guest rooms. These DID DNs must be coordinated with the local exchange and become permanent in the Meridian 1 system.

The FDID feature allows hotels to assign a temporary DID number to a guest room using a Property Management System (PMS) or Background Terminal (BGD).

When a guest checks into a hotel and requests a direct line to their room, the request is entered in the PMS or BGD. A PMS message is then sent to the Meridian 1 to associate the FDID to the guest's room telephone.

When a guest checks out, a PMS message is sent to the Meridian 1 to cancel the FDID number associated to the guest's room telephone. The canceled FDID DN is then returned to the PMS system as an available DID and can be assigned to another guest. Incoming calls to a canceled FDID DN are rerouted to the Attendant DN.

> ***Note:*** The range of available FDID DNs must be large enough so the same DN is not reassigned immediately.

Only incoming DID calls are affected by FDID. Outgoing calls and room to room calls are not affected.

Operating parameters

If a system has both the PMS and Background Terminal, use the PMS to assign or cancel FDIDs to ensure the database between the Meridian 1 and the PMS is updated properly. It is not recommended to use the BGD to assign or cancel FDID DNs if a PMS is present due to the following operating parameters:

- When a FDID number is cancelled, the FDID is returned to an unused pool of numbers to be managed by the PMS system. If a background Terminal is used, these FDID number have to be managed manually.
- DID assignment and DID cancellation messages sent from the Background Terminal are not echoed to the Property Management System. Since the PMS is not aware of such changes, its database may be out of synch with the Meridian 1. Therefore, it is recommended that the new DID assignment/cancellation messages not be done via the BGD if a PMS system is present.
- As per existing operation, the PMS will drive the database resynchronization between the PMS and Meridian 1 database. Messages are sent from the PMS to the Meridian I to update the Meridian 1 database. If the Meridian 1 database is updated more frequently than the PMS database, use the Room Status Print command on the BGD to print the list of room DNs that associate with the FDID DNs. Corresponding changes can then be made to the PMS database.

If a PMS is present, software changes are required by the PMS.

A room telephone is defined with Controlled Class of Service Allowed (CCSA). The following telephones are supported as room telephones:

- Analog (500/2500 type) telephones
- SL-1 and M1309 telephones
- Meridian digital telephones
  - M2009
  - M2012
  - M2018
  - M2112
  - M2616
  - M2317

The M3000, and ACD telephones are not supported as room telephones. Flexible Direct Inward Dialing is not supported on telephones with DTA (data terminal allowed) Class of Service.

Feature interactions

Call Redirection

All Call Redirection by the room DN will apply to the associated DID DN. If the DID DN is forwarded to voice mail, then the external call to the room telephone is forwarded to voice mail.

Hospitality Management

The FDID feature simultaneously exists with the Hospitality Management (HOSP) feature but cannot share the same Incoming DID Digit Converion (IDC) table.

Room Status

The FDID feature modifies the print format to include the FDID DN for each room DN. Refer to the *Administration* (553-3001-311) for print commands.

Feature packaging

The Flexible Direct Inward Dialing (FDID) requires package 362 along with the following packages:

- New Flexible Code Restriction (NFCR) package 49
- Controlled Class of Service (CCOS) package 81
- Background Terminal (BGD) package 99
- Incoming DID Digit Conversion (IDC) package 113

A system supporting PMS requires the Property Management System Interface (PMSI) package 103 which requires:

- Controlled Class of Service (CCOS) package 81
- Background terminal (BGD), package 99
- Room Status (RMS), package 100

Feature implementation

LD 15 – Configure maximum of Incoming Digits allowed.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	FCR	New Flexible Code Restriction.
CUST	xx	Customer number to be assigned with this feature. xx = 0-99 for Options 51C - 81C. xx = 0-31 for Option 11C.
...	...	
IDCA	YES	Incoming DID Digit Conversion allowed. (NO) Incoming DID Digit Conversion denied is the default.
- DCMX	1-255	Maximum number of IDC conversion tables.

LD 49 – Create a table to convert incoming Direct Inward Dialing digits.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	IDC	Incoming Digit Conversion.
CUST	xx	Customer number, as defined in LD. xx = 0-99 for Options 51C, 61C, and 81C. xx = 0-31 for Option 11C.
DCNO	1-254	Digit Conversion Tree number (IDC tree number). ***Note:*** Number 0 is not allowed for IDC tree number.
FDID	YES	Flexible DID IDC tree. (NO) is the default.
IDGT	0-9999 0-9999	Incoming Digits (DN or range of DNs to be converted).

LD 16 – Enable digit conversion for required DID trunk routes.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number, as defined in LD. xx = 0-99 for Options 51C, 61C, and 81C. xx = 0-31 for Option 11C.
ROUTE	xxx	Route number of DID route. xxx = 0-511 for Options 51C, 61C, and 81C. xxx = 0-127 for Option 11C.
...	...	
IDC	YES	Incoming DID Digit Conversion allowed. (NO) Incoming DID Digit Conversion denied is the default.

- DCNO	(0)-254	Day IDC tree number as defined in LD 49 for this feature.
- NDNO	(0)-254	Night IDC tree number as defined in LD 49 for this feature.

Feature operation

Print FDID DN settings

You can use your BGD to print out the status of a guest room DN with these settings:

For one DN:
PRint STatus <room DN> FD

For a group of consecutive DNs:
PRint STatus <room DN1> <room DN2> FD

For all DNs:
PRint STatus ALl FD

PMS messages sent to the Meridian 1

Flexible Direct Inward Dialing (FDID) contains the following list of messages sent by the PMS to the Meridian 1:

- To assign a temporary DN to the room telephone:
  SE ST <room DN> FD <did DN>
  where SE = telephone, ST = STatus, FD <did DN> = DID Assignment message.
- To cancel a temporary DN from the room telephone:
  SE ST <room DN> FD OFf
  where SE = telephone, ST = STatus, <room DN> = A single room DN, FD X = DID Cancelation message.

- To cancel temporary multiple DNs to room telephones:
  SE ST <room DN1> <room DN2> FD OFf
  where SE = telephone, ST = STatus, <room DN1> <room DN2> = A range of room DNs
- To cancel temporary multiple DNs from the room telephones:
  SE ST AL FD OFf
  where SE = telephone, ST = STatus, AL = AL1 room DNs, FD X = DID Cancelation.

An unassigned DID DN trunk call is directed to the Attendant DN.

Note: The FDID feature does not support the FIND command.

Maid Identification

Contents

This section contains information on the following topics:

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Feature operation 117
Room Key operation 117
Dial Access method 119

Reference list

The following are the references in this section:

- *Background Terminal Facility description* (553-2311-316)
- *Property Management System Interface description* (553-2801-101)

The Maid Identification, or Maid ID, feature makes it easier to keep track of which maids clean which rooms. Maid ID introduces a new keyword, MI, and a one- to four-digit Maid ID.

The MI keyword is used with the Background Terminal Set Status command when a room's cleaning status is changed. The Maid ID number, which accompanies the MI keyword, uniquely identifies a maid.

The following features allow the Maid ID to be entered as part of the room cleaning status:

- Background Terminal (BGD) Set Status command
- Room Key (RMK) operation
- Dial Access method
- Off-hook Detection, and
- Controlled Class of Service (CCOS) key operation.

For Off-hook Detection and CCOS key operation, the Maid ID always defaults to zero (0).

Operating parameters

Meridian Modular Terminal firmware, version 11, and the Hospitality Screen Enhancement (HSE) package (208) are needed to support the special Maid ID screens. They are not required to support the feature itself.

For Off-hook Detection, Line Lockout (LLT) must be defined as overflow tone in LD 15. Any other lockout definition prohibits Maid ID use with Off-hook Detection.

Feature interactions

Maid ID alters dial access for Room Status (RMS). After entering a valid cleaning status, instead of hearing dial tone or Flexible Feature Code (FFC) confirmation tone, the maid hears a special interrupted dial tone, prompting for the Maid ID. The maid can then enter the Maid ID followed by the octothorpe (#), or can hang up.

Feature packaging

Maid Identification (MAID) package 210 requires:

- Controlled Class of Service (CCOS) package 81
- Background Terminal Facility (BGD) package 99, and
- Room Status (RMS) package 100.

Optional packages include:

- Property Management System Interface (PMSI) package 103

- Flexible Feature Codes (FFC) package 139, and
- Hospitality Screen Enhancements (HSE) package 208.

Feature implementation

Maid ID does not require any additional Service Change implementation. If the feature package is equipped, implement Maid ID using a Background Terminal (BGD) or Property Management System Interface (PMSI). See *Background Terminal Facility description* (553-2311-316) and *Property Management System Interface description* (553-2801-101). See also "Room Status," in this document, for information regarding its implementation.

Feature operation

Maid ID can be entered along with room cleaning status in the Background Terminal (BGD) or Property Management System (PMS). For a complete discussion of this feature's programming, see *Background Terminal Facility description* (553-2311-316) and *Property Management System Interface description* (553-2801-101).

Room Key operation

The steps for the Room Key (RMK) operation are:

1 Press **RMK** once. The indicator flashes.

2 Dial the Directory Number (DN) of the room for which the cleaning status is being changed. The indicator lights steadily.

3 Enter a cleaning status code, 1 through 7 as follows:

1 = cleaning requested
2 = cleaning in progress
3 = room cleaned
4 = room passed inspection
5 = room failed inspection
6 = cleaning skipped
7 = not for sale

4 Press the asterisk (*). This sets the display to accept the Maid ID. The asterisk does not show on the display. Each time the asterisk (*) is entered, the display clears.

When Hospitality Screen Enhancements (HSE) is equipped, and Meridian Modular telephones are used with firmware version 11 or higher, the display looks like this:

xxx...x Enter Maid ID

xxx...x = Room DN

5 Enter the Maid ID.

With HSE, a cursor marks the beginning position for the Maid ID. The Maid ID shows on the display. Correct the Maid ID by pressing the asterisk (*) to clear the incorrect Maid ID and to reset the display. Enter the correct Maid ID.

6 Press **RMK** again to complete the operation. The RMK indicator goes off.

Dial Access method

This method uses either Special Prefix (SPRE) codes or Flexible Feature Codes (FFCs).

Special Prefix (SPRE)

To enter Room Status (RMS) using SPRE codes:

1 Lift the handset.

2 Dial SPRE+86.

3 Enter a cleaning status code, 1 through 7, as follows:

1 = cleaning requested
2 = cleaning in progress
3 = room cleaned
4 = room passed inspection
5 = room failed inspection
6 = cleaning skipped
7 = not for sale

Special interrupted dial tone is heard, prompting for the Maid ID.

Operation prior to software Release 17 used steps 1 through 3, and step 7. Steps 4, 5, and 6 have been added with Maid ID. If these new steps are skipped, the system sets the Maid ID to zero (0).

4 Press the asterisk (*). This sets the display to accept the Maid ID. The asterisk (*) does not show on the display.

5 Enter the Maid ID. The digits are shown on the display, if equipped. If you enter an incorrect Maid ID, press the asterisk (*), and reenter the Maid ID.

6 Press the octothorpe (#) to end Maid ID entry. The octothorpe (#) does not appear on the display.

7 Hang up the handset.

Flexible Feature Codes (FFCs)

To enter Room Status using Flexible Feature Codes:

1 Lift the handset.

2 Enter the RMST FCC.

3 Enter a cleaning status code, 1 through 7, as follows:

1 = cleaning requested
2 = cleaning in progress
3 = room cleaned
4 = room passed inspection
5 = room failed inspection
6 = cleaning skipped
7 = not for sale

Operation prior to software Release 17 used steps 1 through 3 and steps 7a and b. Steps 4, 5, and 6 have been added with Maid ID. A special interrupted dial tone prompts for the Maid ID number. If these new steps are skipped, the system sets the Maid ID to zero (0).

4 Press the asterisk (*). This sets the display to accept the Maid ID; it does not show on the display.

5 Enter the Maid ID. The digits appear on the display. If you enter an incorrect Maid ID, press the asterisk (*), and reenter the Maid ID.

6 Press the octothorpe (#) to end Maid ID entry. The octothorpe (#) does not appear on the display.

7a If the FCC confirmation tone was configured, you hear the FCC confirmation tone. Hang up or press **Rls**.

7b If the FCC confirmation tone was not configured, you will hear a dial tone. Make a call, hang up, or press **Rls**.

Command summary

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Automatic Wake Up

Command	Action
(PRint) WAke dn	Print wake-up call time for one DN.
(PRint) WAke dn1 dn2	Print wake-up call times for a consecutive group of DNs.
(PRint) WAke ALl	Print wake-up call times for all DNs.
FInd WAke dn1 dn2	Find the first DN in a consecutive group with a call time set.
Fl	Find the next one. (Follows the previous command.)
SEt WAke dn **TIme** hhmm	Set wake-up call time for one DN.
SEt WAke dn1 dn2 **TIme** hhmm	Set wake-up call times for a consecutive group of DNs.
SEt WAke dn **TIme OFf**	Cancel one wake-up call.

Message Registration

Command	Action
(PRint) MEter dn	Print meter value for one DN.
(PRint) MEter dn1 dn2	Print meter values for a consecutive group of DNs.
(PRint) MEter ALl	Print meter values for all DNs.
(PRint) MEter ALl condition	Print meter values for all DNs in the given condition, for example ZEro.
(PRint) MEter dn1 dn2 **CUstomer**	Print meter values for a consecutive group of DNs and the customer meter.
FInd MEter ALl	Find the first DN in the whole system with a non-zero meter.
FI	Find the next one. (Follows the previous command.)
SEt MEter dn **ZEro**	Set one meter to zero.
SEt MEter ALl ZEro	Set all meters to zero.
SEt MEter CUstomer ZEro	Set the Customer meter to zero.
SEt MEter dn **VAlue** n	Set one meter to the value given.
SEt MEter dn1 dn2 **VAlue** n **DIsplay ON/OFf**	Set a consecutive group of meters to value given (with display on or display off).
SEt MEter dn **ON/OFf**	Turn a meter for one DN on or off.
SEt MEter ALl ON/OFf	Turn all meters on or off.

Room Status (Part 1 of 4)

Command	Action
(PRint) STatus dn	Print the current status of one DN.
(PRint) STatus dn1 dn2	Print the current status of a consecutive group of DNs.
(PRint) STatus dn1 dn2 status	Print all the DNs in the group that are in the specified status.
(PRint) STatus ALl	Print the current status of all DNs.
(PRint) STatus ALl status	Print all DNs that are in the specified status.
FInd STatus dn1 dn2 status	Find the first DN in a consecutive group with the given status.
FI	Find the next one. (Follows the previous command.)
SEt STatus dn **CHeck (IN)**	Check in one DN.
SEt STatus dn1 dn2 **CHeck (IN)**	Check in a consecutive group of DNs.
SEt STatus ALl CHeck (IN)	Check in all DNs.
SEt STatus dn **CHeck OUt**	Check out one DN.
SEt STatus dn **MI nnnnCHeck (IN)/OUt**	Check in/out one DN by Maid ID number nnnn
SEt STatus dn1 dn2 **CHeck OUt**	Check out a consecutive group of DNs.
SEt STatus ALl CHeck OUt	Check out all DNs.
SEt STatus dn **OCcupied**	Set one DN to occupied.
SEt STatus dn1 dn2 **OCcupied**	Set a consecutive group of DNs to occupied.
SEt STatus ALl OCcupied	Set all DNs to occupied.
SEt STatus dn VAcant	Set one DN to vacant.
SEt STatus dn1 dn2 VAcant	Set a consecutive group of DNs to vacant.
SEt STatus ALl VAcant	Set all DNs to vacant.

Room Status (Part 2 of 4)

Command	Action
SEt STatus dn **SAle**	Set one DN to ready for sale.
SEt STatus dn1 dn2 **SAle**	Set a consecutive group of DNs to ready for sale.
SEt STatus ALl SAle	Set all DNs to ready for sale.
SEt STatus dn **NS**	Set one DN to not for sale.
SEt STatus dn1 dn2 **NS**	Set a consecutive group of DNs to not for sale.
SEt STatus ALl NS	Set all DNs to not for sale.
***SEt STatus** dn **REquested**	Set one DN to cleaning requested.
***SEt STatus** dn **REquested MI nnnn**	Set one DN to cleaning requested by Maid ID nnnn.
***SEt STatus** dn1 dn2 **REquested**	Set a consecutive group of DNs to cleaning requested.
***SEt STatus ALl REquested**	Set all DNs to cleaning requested.
***SEt STatus** dn **PRogress**	Set one DN to cleaning in progress.
***SEt STatus** dn1 dn2 **PRogress**	Set a consecutive group of DNs to cleaning in progress.
***SEt STatus ALl PRogress**	Set all DNs to cleaning in progress.
***SEt STatus** dn **CLeaned**	Set one DN to cleaned.
***SEt STatus** dn1 dn2 **CLeaned**	Set a consecutive group of DNs to cleaned.
***SEt STatus ALl CLeaned**	Set all DNs to cleaned.
***SEt STatus** dn **PAssed**	Set one DN to passed inspection.
***SEt STatus** dn1 dn2 **PAssed**	Set a consecutive group of DNs to passed inspection.
***SEt STatus ALl PAssed**	Set all DNs to passed inspection.
***SEt STatus** dn **FAiled**	Set one DN to failed inspection.

Room Status (Part 3 of 4)

Command	Action
***SEt STatus** dn1 dn2 **FAiled**	Set a consecutive group of DNs to failed inspection.
***SEt STatus ALl FAiled**	Set all DNs to failed inspection.
***SEt STatus** dn **SKipped**	Set one DN to cleaning skipped.
***SEt STatus** dn1 dn2 **SKipped**	Set a consecutive group of DNs to cleaning skipped.
***SEt STatus ALl SKipped**	Set all DNs to cleaning skipped.
SEt STatus dn **COntrolled**	Set one DN to Controlled Class of Service.
SEt STatus dn1 dn2 **COntrolled**	Set a consecutive group of DNs to Controlled Class of Service.
SEt STatus ALl COntrolled	Set all DNs to Controlled Class of Service.
SEt STatus dn **COntrolled OFf**	Set one DN to System Class of Service.
SEt STatus dn1 dn2 **COntrolled OFf**	Set a consecutive group of DNs to System Class of Service.
SEt STatus ALl COntrolled OFf	Set all DNs to System Class of Service.
SEt STatus dn **E1**	Set one DN to Enhanced Controlled Class of Service level 1.
SEt STatus dn1 dn2 **E1**	Set a consecutive group of DNs to Enhanced Controlled Class of Service level 1.
SEt STatus ALl E1	Set all DNs to Enhanced Controlled Class of Service level 1.
SEt STatus dn **E1 OFf**	Set one DN to System Class of Service.
SEt STatus dn1 dn2 **E1 OFf**	Set a consecutive group of DNs to System Class of Service.
SEt STatus ALl E1 OFf	Set all DNs to System Class of Service.

Room Status (Part 4 of 4)

Command	Action
SEt STatus dn **E2**	Set one DN to Enhanced Controlled Class of Service level 2.
SEt STatus dn1 dn2 **E2**	Set a consecutive group of DNs to Enhanced Controlled Class of Service level 2.
SEt STatus ALl E2	Set all DNs to Enhanced Controlled Class of Service level 2.
SEt STatus dn **E2 OFf**	Set one DN to System Class of Service.
SEt STatus dn1 dn2 **E2 OFf**	Set a consecutive group of DNs to System Class of Service.
SEt STatus ALl E2 OFf	Set all DNs to System Class of Service.
SEt STatus dn **LAnguage** (no. or ID)	Set one DN to the language number or ID.
SEt STatus dn1 dn2 **LAnguage** (no. or ID)	Set a consecutive group of DNs to the language number or ID.
SEt STatus ALl LAnguage (no. or ID)	Set all DNs to the language number or ID.
SEt STatus dn **VIp <CR>**	Set one DN to VIP status.
SEt STatus dn1 dn2 **VIp <CR>**	Set a consecutive group of DNs to VIP status.
SEt STatus ALl VIp <CR>	Set all DNs to VIP status (not recommended).

Note: * Maid ID can be appended to these commands. Use the keyword MI followed by the one- to four-digit Maid ID number. For example: **SEt STatus 1205 CLeaned MI 14 <CR>** changes the cleaning status of room with DN 1205 to cleaned, by maid with ID number 14.

Call Party Name Display

Command	Action
SEt CPnd dn 'name' **LA** (no. or ID) **CH (IN)**	Set Room for Call Party Name Display (including the language number or ID) at check-in.
SEt CPnd dn **CH OU**	Set Room to remove Call Party Name Display at check-out.
(PRint) CPnd dn	Print out the CPnd name for one or more rooms.

Administration

Command	Action
(PRint) POrt	Print current settings of terminals.
(PRint) OPtion	Print current option settings.
(PRint) TRaffic	Print the contents of the traffic file.
(PRint) WAke MAp	Print the wake-up call map.
SEt OPtion ID aa bb	Change terminal name from port number or old port ID aa to new portID bb.
SEt OPtion LAnguage (language no.) (id)	Set two-letter language ID for each language number (0–5).
SEt OPtion UNit cccc **ATtendant (ON)**	Set a unit cost figure to give total call charges, and have them displayed at Attendant Console.

Automatic List

Command	Action
AUtomatic hhmm command	Place the command in the Automatic List and have it executed at time hhmm each day.
(PRint) AUtomatic	Print the contents of the Automatic List.
SEt AUtomatic n **OFf**	Delete command n from the Automatic List (where n is a list entry number from 1 to 12).

Options for the Set command

Command	Action
SEt OPtion COnfirm (ON)/OFf	Allow/disallow confirm messages for SET command.
SEt OPtion X (ON)/OFf	Allow/disallow X substitution for SET command.
SEt OPtion RAnge (ON)/OFf	Allow/disallow range entries (dn1 dn2) for SET command.
SEt OPtion ALl (ON)/OFf	Allow/disallow all DNs to be used in the SET command.

Terminal functions

Command	Action
SEt OPtion POrt portID feature(s) **(ON)/OFf**	Set which of the four features this terminal will be used for (WAke, MEter, STatus, OPtion).
SEt OPtion POrt portID function(s) **(ON)/OFf**	Set which functions this terminal will be able to perform (SEt, REad, DIsplay, PRint).
SEt OPtion POrt feature(s) function(s) **(ON)/OFF**	Set the feature and function for this terminal (WAke DIsplay, MEter PRint).

Turning display messages on or off

Command	Action
SEt OPtion DIsplay item(s) (ON)/OFf	Set which features you want to have display messages printed for. Choices are: WAke or ANswer, ENtry, REturn; MEter; STatus or CCos key, RMk, DIal, DEtect, TErminal.
SEt OPtion TIme DEtect t1 t2	Set off hook detection time and also time occupied rooms are set to cleaning requested.
SEt OPtion TIme DEtect OFf	Turn off hook detection, only.
SEt OPtion TIme REquest t1	Set time occupied rooms are set to cleaning requested.
SEt OPtion TIme REquest OFf	Turn off automatic setting of occupied rooms to cleaning requested.
SEt OPtion TIme DIal (ON)/OFf	Allow/disallow Dial Access to cleaning-status.

Recorded Announcement

Command	Action
SEt OPtion TIme RAn2 t1 t2	Set time of secondary recorded announcement.
SEt OPtion TIme RAn2 OFf	Turn off use of secondary recorded announcement.

Check-in, Check-out criteria

Command	Action
SEt OPtion CHeck items **(ON)/OFf**	Turn the automatic setting of any of the following items on or off: COntrolled change telephone Class of Service on check-in/out E1 Enhanced Controlled Class of Service level 1 on check-in/out E2 Enhanced Controlled Class of Service level 2 on check-in/out REquest change room to cleaning requested on check-out MWI cancel Message Waiting lamp on check-in/out DNd cancel Do Not Disturb on check-in/out WAke cancel wake-up call on check-in/out LAnguage set language to 0 at check-in/out SL1 check-in or out using a CONTROL CLS key on an SL-1 telephone TL check if the set is disconnected on check-in/out.

For Sale Print criteria

Command	Action
SEt OPtion SAle items **(ON)/OFf**	Set the criteria for a 'rooms ready for sale' printout. In addition to VAcant and PAssed, which are always included, you can add any of the following: REquested PRogress CLeaned FAiled SKipped OCcupied.

Guest Room category

Command	Action
SEt STatus dn **CAtegory** n	Set one DN to be in a particular category (range 1-15).
SEt STatus dnx **CAtegory** n	Set a group of DNs to be in a particular category, using X substitution.
SEt OPtion CAtegory n name	Give a category a name (up to 4 letters).

Meridian 1 and Succession Communication Server for Enterprise 1000

Background Terminal Facility

Description

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Meridian 1 and Succession Communication Server for Enterprise 1000

Message Center

Description and Operation

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About this document

This document applies to Meridian 1 Internet Enabled and Succession Communication Server for Enterprise (CSE) 1000 systems.

This document is a global document. Contact your system supplier or your Nortel Networks representative to verify that the hardware and software described is supported in your area.

Who should use this document

This document is intended for individuals responsible for Message Center administration.

Description

Contents

This section contains information on the following topics:

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Reference list

The following are the references in this section:

- *Administration* (553-3001-311)
- *Automatic Call Distribution: Feature Description* (553-2671-110)
- *Meridian Link ISDN/AP General Guide* (553-2901-100)

The Message Center allows an incoming trunk or internal call to be automatically routed to a Message Center if it is not answered at the original destination. The main functions of the Message Center are as follows:

- receive and take messages for calls forwarded to the Message Center
- convey messages to called telephones or consoles on request
- activate and deactivate Message Waiting Indication at users' telephones

Automatic and manual diagnostics are provided to clear all active Message Waiting Indications when required. Three types of Message Center operations are offered:

- Automatic Call Distribution (ACD)
- SL-1 and Meridian digital telephone
- attendant

Depending on the packages equipped, you can have any Message Center option or combination of Message Center.

Incoming calls to the Message Center

Calls coming into a Message Center can be direct or indirect.

Direct message calls

The Message Center can be accessed by a direct message call, which can take any of the following forms:

- An attendant extends a call to the message center.

- A 500/2500 telephone dials the Message Center DN.
- An SL-1 or Meridian digital telephone accesses the Message Center.

Indirect message calls

A call can be routed to the Message Center if it is not answered at the original terminating telephone. This indirect call can take any of the following forms:

- A non-direct inward dial call encounters a no-answer condition so that Call Forward No Answer (CFNA) is invoked, routing it to the Message Center.
- A direct inward dial (DID) call encounters CFNA or Call Forward Busy (CFB) and is routed to the Message Center.
- The Message Center Directory Number (DN) can be specified as a Hunt or Call Forward DN for any telephone.

Operation

A Message Center can be organized in one of three ways:

- Automatic Call Distribution (ACD)
- SL-1 and Meridian digital telephone
- attendant

Automatic Call Distribution (ACD) Message Center

A special aspect of ACD is defined for optional use with Message Center. Each telephone assigned to the ACD-type Message Center is equipped with an ACD in-calls key/lamp pair. One Message Indication and one Message Cancellation key/lamp pair must also be equipped if Message Waiting Indication and control are required. Calls redirected to the Message Center are queued in order of arrival and distributed to answering positions in the same way ACD calls are distributed.

If all assigned positions are in the Make Busy mode, redirected calls and message retrieval calls are forwarded to the night number specified for the Message Center ACD DN. This DN can be the attendant, another Message Center, or an outside number. Up to 240 Message Center ACD DNs can be assigned per customer.

ACD Agent Position Increase, software Release 12 and later software
Software supports up to 1200 positions on the system Options 51C, 61C, and 81C.

If the appropriate ACD packages are equipped, an ACD Message Center can support a full complement of ACD features. See *Automatic Call Distribution: Feature Description* (553-2671-110).

When an indirect message call is presented to a Message Center operator's telephone, the MSG IN-CALLS key flashes, and both the calling DN and called DN are displayed. If the call originated from a trunk, the route and member number of the trunk display instead of the calling DN.

To answer the call, press the MSG IN-CALLS key. You can now take a message or release as required.

If the caller wants to leave a message, take down the required information, then pass it on to the called party. Press the MSG INDIC key to notify the called party that they have a message waiting.

Press the RLS key to release the call. You rejoin the ACD queue when the Message Center call is released.

When a Message Center call comes in and the called DN displays, the MSG INDIC lamp at the operator's telephone reflects the status of the called telephone's Message Waiting lamp as follows. If Audible Message Waiting (AMW) is equipped in place of the lamp, interrupted dial tone indicates the called party's status.

- Steadily lit: If the operator's MSG INDIC lamp is steadily lit, the Message Waiting Indication at the called telephone is inactive.
- Fast flashing (60 ipm): If the operator's MSG INDIC lamp is fast flashing, then the Message Waiting Indication at the called telephone is active.
- Slow flashing (30 ipm): If the operator's MSG INDIC lamp is slow flashing, the Message Waiting lamp at the called telephone is disabled or not equipped. This state does not occur if Message Waiting Indication is by interrupted dial tone.

Telephone Message Center

The telephone's Message Center has one or more display telephones sharing a DN designated the Message Center DN. An incoming call to the Message Center is presented to all Message Center telephones at once. The first operator to press the flashing MC DN key is connected to the call. If all operators are busy, incoming message calls get the treatment as specified.

When you press the flashing MC DN key, you are immediately connected to the caller. The display shows the originating DN (or trunk route and member number) and terminating DN. If CPND is equipped, the names are displayed.

When a Message Center call comes in and the called DN displays, the MSG INDIC lamp at the operator's telephone reflects the status of the called telephone's Message Waiting lamp as follows. If Audible Message Waiting (AMW) is equipped in place of the lamp, interrupted dial tone indicates the called party's status.

- Steadily lit: If the operator's MSG INDIC lamp is steadily lit, the Message Waiting indication at the called telephone is inactive.
- Fast flashing (60 ipm): If the operator's MSG INDIC lamp is fast flashing, then the Message Waiting Indication at the called telephone is active.
- Slow flashing (30 ipm): If the operator's MSG INDIC lamp is slow flashing, the Message Waiting lamp at the called telephone is disabled or not equipped. This state does not occur if Message Waiting Indication is by interrupted dial tone.

When an indirect message call is presented to a Message Center operator's telephone, the MSG IN-CALLS key flashes, and both the calling DN and called DN are displayed. If the call originated from a trunk, the route and member number of the trunk display instead of the calling DN.

To answer the call, press the MSG IN-CALLS key. You can now take a message or release as required.

If the caller wants to leave a message, take down the required information and pass it on to the called party. Press the MSG INDIC key to notify the called party that they have a message waiting.

Press the RLS key to release the call. You return to normal telephone operations until the next Message Center call appears.

All telephones have Message Waiting capability, and any SL-1 or Meridian digital telephone (except the M3000) can function as a Message Center. The DN used for message taking should be the prime DN if Message Waiting lamp Indication and Cancellation are desired. Calls are redirected to the telephone-type Message Center using message forwarding. Since this is a normal DN, calls are not queued.

A telephone with Message Waiting may be equipped with a key/lamp pair that notifies you when a message is waiting. When this key is pressed, you are connected with the Message Center.

500/2500 telephones with Message Waiting Allowed CLS may be equipped with a neon lamp for visual indication. These telephones must dial-access the Message Center.

A telephone without a Message Waiting lamp, except the M2317, can be informed that a message is waiting by Audible Message Waiting (AMW) (Prime DNs and Single Appearance DNs only). A special Message Waiting tone is heard each time you go off hook until the Message Waiting Indication is canceled by the Message Center operator. Calls can be originated and received with the tone activated.

Each telephone with a Message Waiting Allowed CLS is assigned to a specific Message Center. Unanswered calls are automatically routed to that Message Center. There is no upper limit to the number of telephones that can be assigned to any Message Center.

Attendant Message Center

An attendant Message Center has up to 15 attendant consoles in a system handling messages in addition to their normal functions as attendants. Incoming message calls can access an attendant Message Center in one of two ways: a phantom Message Center DN or normal attendant access.

Phantom Message Center DN This method requires the presence of the ACD package in the system. The ACD DN for this feature has no agents assigned to it. Any message calls coming into it are automatically transferred to the attendant and appear on a MSG CENTER Incoming Call Indicator (ICI) key. The Message Center DN established in this way is thus a phantom Message Center DN.

When a message call appears at an attendant console through a Message Center DN, the MSG CENTER ICI lamp flashes, and the display shows the originating DN (or trunk route and member number) and terminating DN. If Call Party Name Display (CPND) is equipped, the names are shown instead of the DNs.

When a Message Center call comes in and the called DN displays, the MSG INDIC lamp at the operator's telephone reflects the status of the called telephone's Message Waiting lamp as follows. If Audible Message Waiting (AMW) is equipped in place of the lamp, interrupted dial tone indicates the called party's status.

- Steadily lit: If the operator's MSG INDIC lamp is steadily lit, the Message Waiting Indication at the called telephone is inactive.
- Fast flashing (60 ipm): If the operator's MSG INDIC lamp is fast flashing, then the Message Waiting Indication at the called telephone is active.
- Slow flashing (30 ipm): If the operator's MSG INDIC lamp is slow flashing, the Message Waiting lamp at the called telephone is disabled or not equipped. This state does not occur if Message Waiting Indication is by interrupted dial tone.

When you press a free LPK key or the flashing MSG CENTER ICI key, you automatically connect to the incoming call. If the caller wants to leave a message, take down the required information and pass it on to the called party. Press the MSG INDIC key to notify the called party that they have a message waiting.

Press the RLS key to release the call. You return to normal telephone operations until the next Message Center call appears.

Normal attendant access If a phantom Message Center DN has not been established on an attendant console ICI key, the attendant must determine verbally that this is a message call. In this case, the MSG INDIC lamp does not show the state of the called party's Message Waiting Indication. After the call is released, the attendant can provide Message Waiting Indication by directly accessing the called party's telephone.

Message retrieval calls

All telephones have Message Waiting capability, and any SL-1 or Meridian digital telephone (except the M3000) can function as a Message Center. The DN used for message taking should be the prime DN if Message Waiting lamp Indication and Cancellation are desired. Calls are redirected to the telephone-type Message Center using Message Forwarding. Since this is a normal DN, calls are not queued.

A telephone with Message Waiting may be equipped with a key/lamp pair that notifies you when a message is waiting. When this key is pressed, you are connected with the Message Center.

500/2500 telephones with Message Waiting Allowed Class of Service may be equipped with a neon lamp for visual indication. These telephones must dial-access the Message Center.

A telephone without a Message Waiting lamp, except the M2317, can be informed that a message is waiting by Audible Message Waiting (AMW) (Prime DNs and Single Appearance DNs only). A special Message Waiting tone is heard each time you go off hook until the Message Waiting Indication is canceled by the Message Center operator. Calls can be originated and received with the tone activated.

Message indication at a called telephone can take the following forms:

SL-1 and Meridian digital telephones with a key/lamp pair The lamp associated with the MSG WAITING key indicates that a message is waiting at the Message Center.

500/2500 telephones with a Message Waiting lamp A Message Waiting lamp on the telephone indicates that a message is waiting at the Message Center.

Telephones Without a Message Waiting lamp As an option in software Release 2, Message Waiting Indication can be provided by AMW (a 120 ipm interrupted dial tone) instead of a Message Waiting lamp, or key/lamp pair when the user goes off hook at the telephone. A faulty Message Waiting lamp does not result in Message Waiting Indication by interrupted dial tone; in this case, it is up to the user to call the Message Center to see if there is a message. Telephones equipped with neither Message Waiting lamps nor AMW have no visual indication that a message is waiting. It is up to the user to call the Message Center to see if a message is waiting.

Regardless of whether message indication is by lamp or AMW, the user can still make calls and operate features normally. The Message Indication remains active until canceled by a Message Center operator or by the system during a night routine.

Placing a message retrieval call

SL-1 sets The user goes off hook and presses the MESSAGE WAITING key. The digit display shows the Message Center DN. The Message Center answers and gives the user the message, then extinguishes the user's Message Indication lamp. The user then goes on hook. The user can also access the Message Center by going off hook and pressing the MESSAGE WAITING key even if the associated lamp is not flashing.

If message indication is by AMW, the user goes off hook and dials the Message Center DN. The Message Center operator cancels the AMW in the same way as a Message Waiting lamp.

500/2500 Telephones Whether or not a message indication lamp is provided with the telephone, the user goes off hook and dials the Message Center DN. The Message Center answers and gives the user the message, then extinguishes the user's Message Indication lamp. If message indication was provided by interrupted dial tone, this is canceled by the Message Center operator in the same way as a Message Waiting lamp. The user then goes on hook.

Answering a message retrieval call

ACD Message Center

The message retrieval call is presented on the MSG IN-CALLS key of a Message Center SL-1 telephone, and the digit display shows the DN of the calling telephone. The MSG CANC lamp reflects the state of the caller's Message Waiting indication as follows:

- Steadily lit: The Message Waiting Indication at the calling telephone is inactive.
- Fast flashing (60 ipm): The Message Waiting Indication at the calling telephone is active.
- Slow flashing (30 ipm): The Message Waiting lamp at the calling telephone is either disabled or not equipped. This state does not occur if Message Waiting Indication is by interrupted dial tone.

To answer the call, the Message Center operator presses the MSG IN-CALLS key. If the Message Center is equipped with Call Forcing, the call is answered automatically. The operator gives the caller the message. If the MSG CANC lamp is flashing, the operator presses the MSG CANC key to deactivate the caller's Message Waiting Indication. The operator then presses the RLS key to release the call.

DN Message Center

The message retrieval call is presented on the MC DN key of a Message Center SL-1 telephone. The Message Center operator answers the call by pressing the MC DN key. The digit display shows the calling DN, and the MSG CANC lamp indicates the state of the calling telephone's message Waiting Indication in the same way as for an ACD-type Message Center. The procedures for deactivating Message Waiting Indication are the same as for an ACD Message Center.

Attendant Message Center

The presentation of a direct message call to an attendant console depends on whether a Phantom Message Center DN has been assigned to an ICI key (Phantom Message Center DN), or the user must dial the attendant as in a normal attendant call (Normal Attendant Access).

The Phantom Message Center ACD DN is assigned to overflow to the MSG CENTER ICI key on the attendant console. When a direct Message Center call comes into the console, the MSG CENTER ICI key flashes. To answer the call, the Message Center operator presses the MSG CENTER ICI key or a free LPK key. The procedures for deactivating a Message Waiting indicator are the same as for an ACD-type Message Center.

With Normal Attendant Access, the attendant must determine verbally that this is a message retrieval call. During the call, the MSG CANC key does not show the state of the user's Message Waiting lamp. After the call is released, the attendant must deactivate Message Waiting Indication directly.

Direct Message Waiting lamp control

The Message Center operator must directly access a telephone to activate or deactivate Message Waiting Indication in the following cases:

- The telephone is calling an Attendant Message Center by direct access.
- The telephone is not currently in contact with the Message Center.

The Message Center operator must first release or place on hold all calls; in an ACD-type Message Center, the NOT READY key must be activated. The operator then decides whether the telephone's Message Waiting Indication is to be activated or canceled.

Query and/or activate

The operator presses the MSG INDIC key, and the associated lamp lights. The operator then dials the DN; no Ringback is heard, but the state of the MSG INDIC lamp reflects the state of the user's Message Waiting lamp (or interrupted dial tone) as follows:

- Steadily lit: The user's Message Waiting Indication is inactive.
- Fast flashing (60 ipm): The user's Message Waiting Indication is active.
- Slow Flashing (30 ipm): The user's Message Waiting lamp is either disabled or not equipped. This state does not occur if Message Waiting Indication is by interrupted dial tone.

Here, the operator can change the state of the user's Message Waiting Indication from inactive to active with the MSG INDIC key. The connection is released when the Message Center operator uses the RLS key.

Query and/or deactivate

The operator presses the MSG CANC key, and the associated lamp lights. The operator then dials the DN. No Ringback is heard, but the state of the MSG CANC lamp reflects the state of the user's Message Waiting Indication in the same way as the MSG INDIC lamp previously described.

At this point, the operator can change the state of the user's Message Waiting Indication from active to inactive by pressing the MSG CANC key, or the indication can be left as it is. The connection is released when the Message Center operator presses the RLS key.

Network Message Service (NMS)

With software Release 15 and later, centralized Message Centers are now provided for all switches in ISDN PRA or ISL networks. Network Message Service (NMS) functions allow access to Message Centers (MC) across a network while remaining transparent to the user. The application is referred to as the Network Message Service—Message Center (NMS-MC).

Three types of Message Centers are supported:

- ACD-type Message Centers
- DN-type Message Centers
- attendant console Message Centers

Feature packaging

The Network Message Service (NMS) package 175 requires the Message Center (MC) package 46 in support.

NMS requires all the packages necessary to support the Integrated Services Digital Network (ISDN), with package 148 as a minimum.

Network Message Services in the Meridian Mail environment require the following packages:

- Originating switch
  - — End to End Signaling (EES) (10)

- Terminating switch
  - — Integrated Messaging System (IMS) (35)
  - — End to End Signaling (EES) (10)
  - — Command Status Link (CSL) (77)

Message Centers in the ACD environment require the ACD packaged options:

- Basic ACD (40)
- ACD package A (45)
- ACD package B (41)
- ACD package C (421)

The user network must be equipped with either the Uniform Dialing Plan (UDP) or the Coordinated Dialing Plan (CDP).

NMS does not support Public Numbering Plans or Multiple Message Center interworking.

Feature implementation

For a complete description of the steps to operate and implement Network Message Services, refer to *Meridian Link ISDN/AP General Guide* (553-2901-100). Also refer to the *Administration* (553-3001-311) for a complete description of the prompts and responses available.

Feature operation

No specific operating procedures are required to use this feature.

Message Waiting Indication (MWI) Interworking

With software Release 19, centralized message services are now provided for a corporate network consisting of Meridian 1 and Centrex (DMS-100) systems. This means that a user on a Meridian 1 system can directly access the voice message system on a DMS-100 and vice versa. MWI Interworking allows either one of the two configurations listed below:

- The Meridian 1 system hosts the Message Center and serves both Meridian 1 and DMS-100 users in the same customer group or corporate network.

  This configuration enables DMS-100 private or public network callers to leave messages for subscribers on the Message Center connected to the Meridian 1 system. The Meridian Message Center then initiates a facility message to turn on the Message Waiting Indicator at the subscriber's station, located either on a Meridian 1 system or on a DMS-100 system within the same customer group. The subscriber can then retrieve the messages, and the Message Waiting Indicators will automatically turn off (accomplished via a facility message initiated from the host switch to the remote switch where the subscriber resides) when retrieval is complete.

- The DMS-100 system hosts the Message Center and serves both Meridian and DMS-100 users in the same customer group.

  This configuration enables Meridian private or public network callers to leave messages for subscribers on the Message Center connected to the DMS-100 system. This configuration then functions in the same way as the Meridian 1 system host configuration.

  Note: These configurations enable one or more Meridian and one or more DMS-100 customer locations to be connected directly or in tandem through Meridian 1 or DMS-100 systems to the Meridian 1 or DMS-100 directly supporting the Message Center. The connections between the switches must be ISDN.

Feature packaging

MWI Interworking requires the following for each node:

- Originating node (the node that has Message Center users)
  - NMS package 175
  - ISDN Signaling package 145
  - ISDN Primary Rate Access package 146 or ISDN Signaling Link package 147
  - ISDN Network Service package 148
  - MWC package 46

— EES package 10

— MWI package 219 (if connected to a DMS-100, SL-100, or DMS-250 switch)

Note: DMS-100 and SL-100 must run with BCS 36 or above loaded.

- Host node (the node that hosts the Message Center)
  - — NMS package 175
  - — IMS package 35
  - — ISDN/AP package 77
  - — BACD package 40
  - — ACDA package 45
  - — ISDN Signaling package 145
  - — ISDN Primary Rate Access package 146 or ISDN Signaling Link package 147
  - — ISDN Network Service package 148
  - — MWC package 46
  - — EES package 10
  - — MWI package 219 (if connected to a DMS-100, SL-100, or DMS-250 switch)
  - — Release 19 software
- Tandem node(s) (the node[s] that do not have Message Center users)
  - — ISDN Signaling package 145
  - — ISDN Primary Rate Access package 146 or ISDN Signaling Link package 147
  - — ISDN Network Services package 148
  - — MWI package 219 (if connected to a DMS-100, SL-100, or DMS-250 switch)

Note: The Meridian Message Center supports a private network and must be equipped with either the Uniform Dialing Plan (UDP) or the Coordinated Dialing Plan (CDP). The DMS-100 supports both a public and private Message Center and can be equipped with a third-party Message Center vendor, such as OCTEL.

For detailed information on this feature, refer to *Meridian Link ISDN/AP General Guide* (553-2901-100).

Feature implementation

There are no specific implementation procedures for this feature.

Feature operation

No specific operating procedures are required to use this feature.

Equipment requirements

Contents

This section contains information on the following topics:

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User telephones 26
SL-1 telephones with Message Waiting key/lamp pair 26
500 telephones 26
2500 telephones 26
Standard 500/2500 and SL-1 telephones 26
Message Waiting lamp requirements 27
Message Center telephones 27
SL-1 telephones 27
Attendant consoles 28
Network Message Services 28
MWI Interworking 29

Reference list

The following are the references in this section:

- *Meridian 1 Telephones: Description and Specifications* (553-3001-108)
- *Automatic Call Distribution: Feature Description* (553-2671-110)

User telephones

A Message Center operator can activate a Message Waiting Indication at any of the following telephones:

- SL-1 telephones with MESSAGE WAITING key/lamp pair assigned
- 500 telephones (equipped with Message Waiting lamp)
- 2500 telephones (equipped with Message Waiting lamp)
- Standard SL-1, 500, or 2500 telephones with AMW

SL-1 telephones with Message Waiting key/lamp pair

Message Waiting Indication is provided by a MESSAGE WAITING key lamp on the SL-1 telephone. The telephone can be a non-digit display or digit display telephone.

500 telephones

The 500 telephone is similar to the standard 500 dial telephone, except that the YR version has a neon lamp above and to the left of the dial. This light comes on during ringing in any type of call, but the Message Center operator can cause the neon lamp to flash in order to indicate that a message is waiting.

2500 telephones

The 2500 telephone is similar to the standard 2500 keypad telephone, except that the YQA version has a neon lamp above and to the left of the key pad. This lamp functions in the same way as that of a 500 telephone.

Standard 500/2500 and SL-1 telephones

Message Waiting Indication cannot be provided visually at these telephones. The user must call the Message Center by dialing the Message Center DN and check to see if there are any messages.

If the system is equipped with software Release 2 or later, AMW can be provided when the user goes off hook in the form of an interrupted dial tone (120 ipm). The user can then dial the Message Center DN and collect the message. In the case of the 500/2500 telephones, the interrupted dial tone form of message indication reduces the hardware requirements of the system. In the case of the SL-1 telephone, it makes an extra feature key available for other uses.

Message Waiting lamp requirements

Should the neon bulb of a 500 or 2500 telephone require replacement, customers should order replacements from Nortel Networks. The bulbs may be ordered using number A0250554. To avoid potential problems, bulbs must meet the following criteria:

- Ignition voltage: The bulb must light when a voltage of 90±2 V dc is applied.
- Extinguishing voltage: The bulb must extinguish when the applied voltage is reduced to 60±2 V dc.
- Power consumption: When a resistance of 30 K ohms is placed in series with the bulb, the power consumption of the bulb must be no more or less than 0.25 W when operated at 90±2 V dc.

If the bulbs installed in a 500 or 2500 telephone do not meet the criteria listed above (for example, if resistance is higher than recommended), the system may see the bulb as being faulty and give a misleading indication to the Message Center operator or disable the feature, or both.

Message Center telephones

The following types of apparatus are suitable for use in a Message Center:

- 16-digit display SL-1 telephones
- 16-digit display attendant consoles

SL-1 telephones

ACD Message Center 16-digit display SL-1 telephones are recommended for use in an ACD-type Message Center. The ACD telephone is similar to the standard 16-digit display SL-1 telephone, but has provision for plugging one or two headsets into the telephone in place of a handset. The telephones should be equipped with MSG IN-CALLS, MSG INDIC, MSG CANC and NOT READY keys, in addition to other keys as required.

A plug-in 24 V transformer or QUT1 centralized power supply is required to power the digit display or any add-on modules, or both. See *Meridian 1 Telephones: Description and Specifications* (553-3001-108) for more information.

Other ACD features are described in *Automatic Call Distribution: Feature Description* (553-2671-110).

DN Message Center The same SL-1 and ACD telephones used for an ACD Message Center can also be used for a DN-type Message Center. In this type of installation, the telephone should be equipped with an MC DN key instead of an MSG IN-CALLS key. The MSG INDIC, MSG CANC, and NOT READY keys are also required.

Attendant consoles

The 16-digit display console is recommended for Message Center use, since with the 8-digit console, some truncation of digit display information can occur. The console(s) can be equipped with a MSG CENTER ICI key to facilitate the control of a message indication at user telephones (although this is not required, since Message Waiting Indication can be performed by direct access), as well as the MSG INDIC and MSG CANC keys.

Network Message Services

Network Message Services supports the following telephones:

- 500/2500 telephones
- SL-I telephones
- Digital telephones
  - M2009
  - M2012
  - M2018
  - M2112
  - M2317
  - M3000
- Meridian Modular Telephones
  - M2006
  - M2008
  - M2016

- M2216
- M2616 (only as a Message Center)

- all attendant consoles

MWI Interworking

MWI Interworking requires the following equipment:

- Message Center for Meridian 1 system
  - Meridian Mail (requires Release 7 software)
- Centrex switches
  - DMS-100 (requires BCS 36 for interworking)
  - DMS-250
  - SL-100 (requires BCS 36)
- Local or remote switch
  - End to End in-band Signaling
- Call Forward All Calls, Call Forward No Answer, Call Forward Busy, and Hunting connections from Message Center subscriber to Message Center on another switch
  - Primary Rate Interface/ ISDN Signaling Link (PRI/ISL) or Common Channel Signaling System (CCS) #7

System requirements

Contents

This section contains information on the following topics:

Reference list 31
QSY22 Power Supply 31
Description 32
Mounting 32
QSY19 Power Supply 35
QBL16 Power Distribution Unit 38
Mounting 39
PE cabinets and shelves 39
Line circuit cards 40
Maintenance 40

Reference list

The following are the references in this section:

- *Administration* (553-3001-311)

QSY22 Power Supply

Power to operate the Message Waiting lamps for 500 and 2500 telephones is supplied by the QSY22 Message Waiting Power Supply Unit. (SL-1 telephones do not require this power supply.) This unit replaces the earlier QSY19 Power Unit.

The power supply can be mounted in the following cabinets: QCA23 (SL-1LE), QCA28 (SL-1A), QCA37 (SL-1M), and QCA8. The power supply is capable of providing power to the Message Waiting line cards of two full PE cabinets (QCA7 and QCA8).

Description

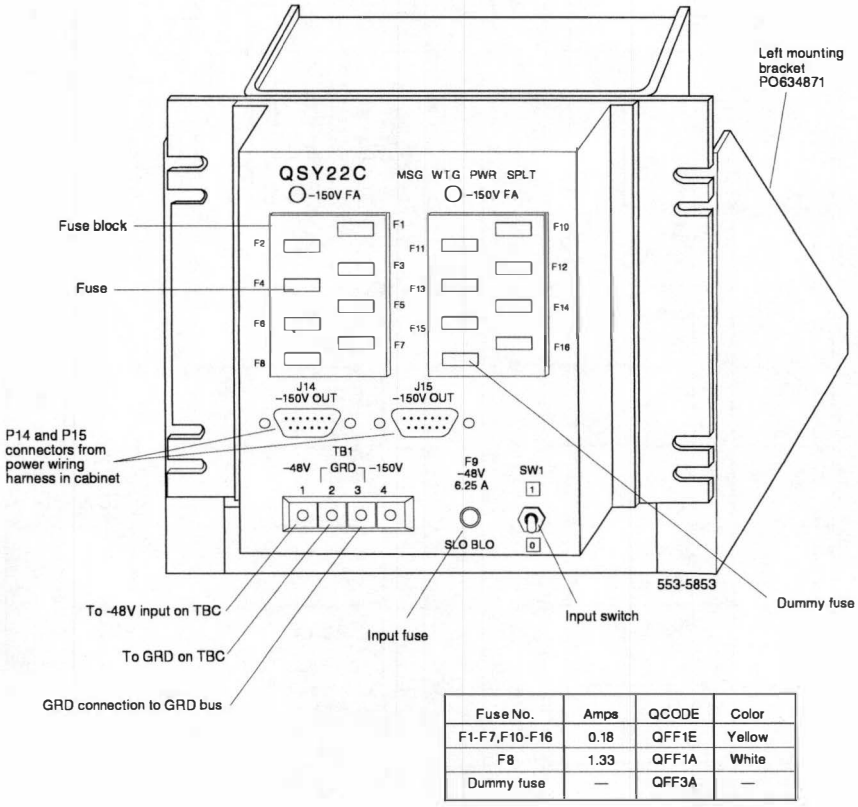
The QSY22 (Figure 1 on page 33) is a -48 to -150 V dc converter with 1.0 A output capacity. The input (TB1-1) is fused at a 6.25 A (slow blow) and accommodates the standard 48 V dc power from the system (see Figure 2 on page 34). The power ground to the system is connected through TB1-2. The logic ground to the system logic ground bus bar is connected through TB1-3. The outputs consist of the following:

- Seven separately fused -150 V dc feeds at connector J14 with a common alarm bar and seven separately fused -150 V dc feeds at connector J15 with a common alarm bar. This provides -150 V dc power to the cabinet in which the QSY22 is mounted. The fuses are rated at 0.25 A each and are numbered 1 to 7 (from connector J14) and 10 to 16 (from connector J15). If a fuse fails, a front panel light emitting diode (LED) lights, indicating that failure has occurred. There is no system alarm to detect loss of output.
- An additional -150 V dc output (TB1-4) fused at 1.33 A (fuse No. 8 on the front panel fuse block), which provides power to the QBL16 Power Distribution Unit on an adjacent PE cabinet.

Mounting

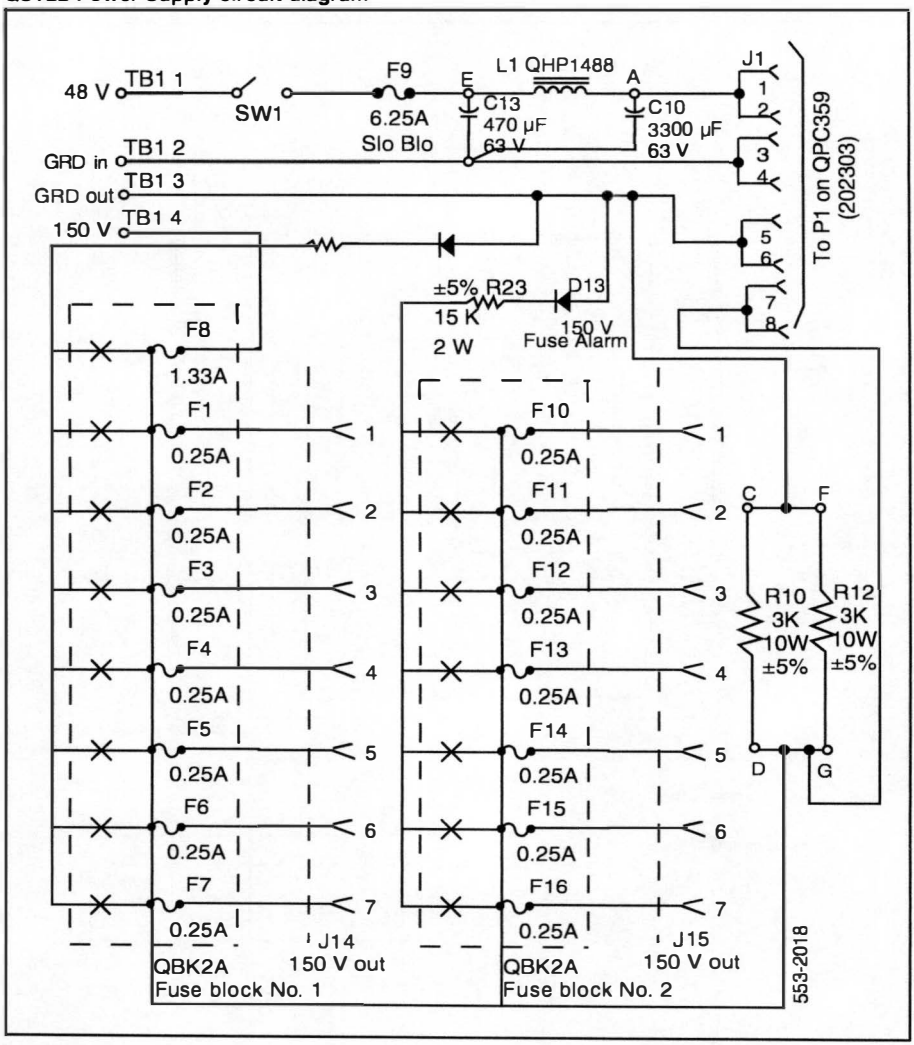
The unit mounts between the uprights where the terminal block (TBC) is on a normal cabinet. To accommodate the power supply, the TBC is moved up if necessary to facilitate the installation of the QSY22 unit (Figure 1 on page 33). The power supply is then installed below the terminal block.

Figure 1
QSY22 Power Supply connections



Fuse No.	Amps	QCODE	Color
F1-F7,F10-F16	0.18	QFF1E	Yellow
F8	1.33	QFF1A	White
Dummy fuse	—	QFF3A	—

Figure 2
QSY22 Power Supply circuit diagram



QSY19 Power Supply

The QSY19 Power Supply, which is no longer available (Figure 3 on page 36), is any early version power supply used to power the Message Waiting lamps. It can be mounted in the QCA8, QCA23, QCA28, and QCA37 cabinets in the same way as the QSY22. The inputs and outputs are fused in the same way as the QSY22; however, there is no alarm LED on the front panel.

The -48 V dc from the system (Figure 4 on page 37) is connected to the TB-1 terminal of the QSY19. The power ground connection to the system is made using pins
8–15 of P14. The –150 V dc output for the QBL16 on the QCA7 cabinet is taken from TB1-3. A load strap is connected from TB1-2 to TB1-3.

The installer must ensure that the load strap (Figure 3 on page 36) is installed before connecting -48 V dc power to the QSY19 power supply; otherwise the power supply could be damaged. If a field installation of the load strap is required, 16 AWG red stranded wire is recommended.

Figure 3
QSY19 Power Supply connections (This unit is no longer available.)

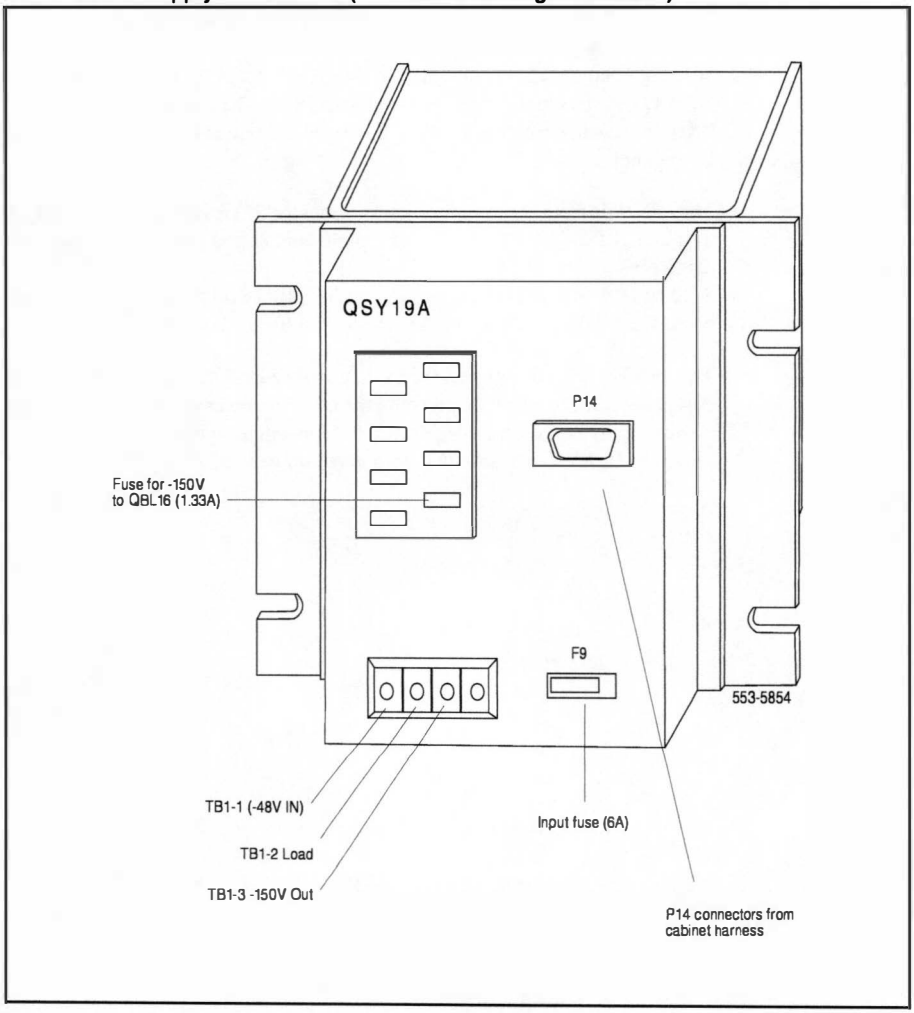
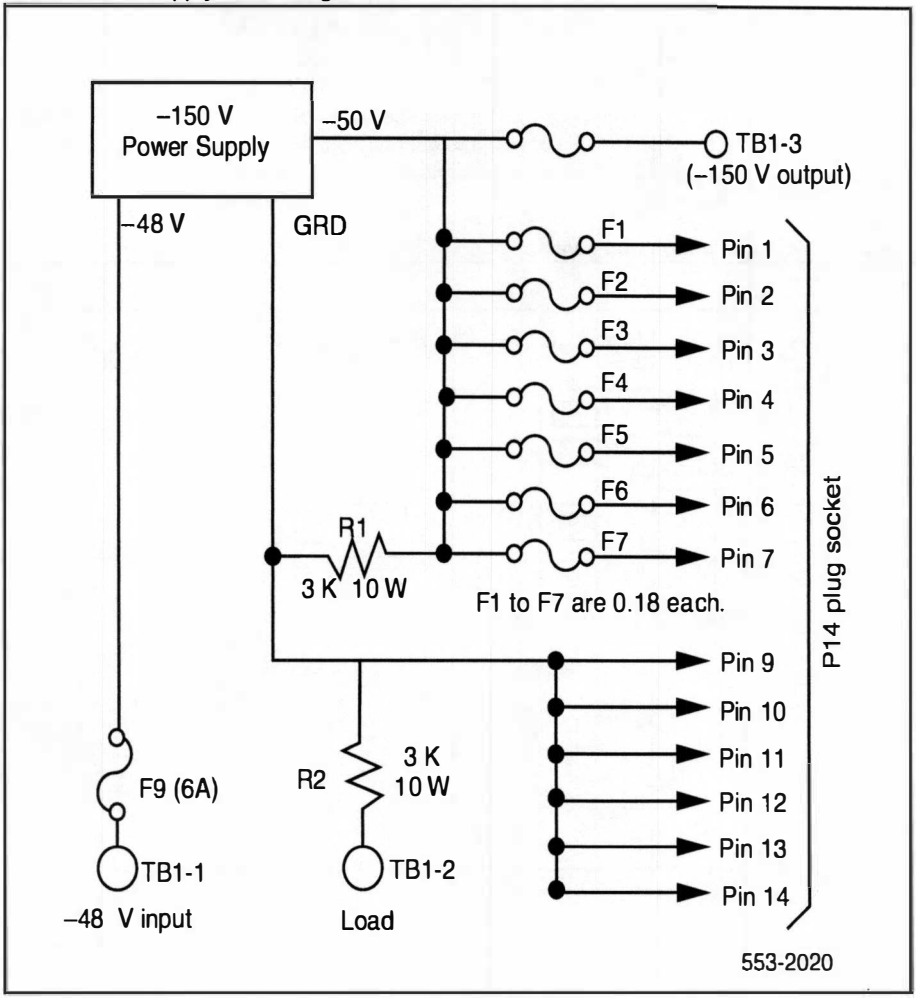


Figure 4
QSY19 Power Supply circuit diagram



QBL16 Power Distribution Unit

Power distribution in the associated PE cabinet is done by the QBL16 Power Distribution Unit (Figure 5 on page 38). The –150 V dc input for the QBL16 comes from the QSY22/QSY19 through a QCAD2 10 AWG power cable that connects to the TB1 terminal of the QBL16 (Figure 6 on page 39). The power is divided into one lead for each shelf, each protected by one fuse (0.18 A) in the QBL16. This power goes out to the shelves through the P14 connector into which plugs the cable from the cabinet wiring harness.

Figure 5
QBL16 Power Distribution Unit connections.

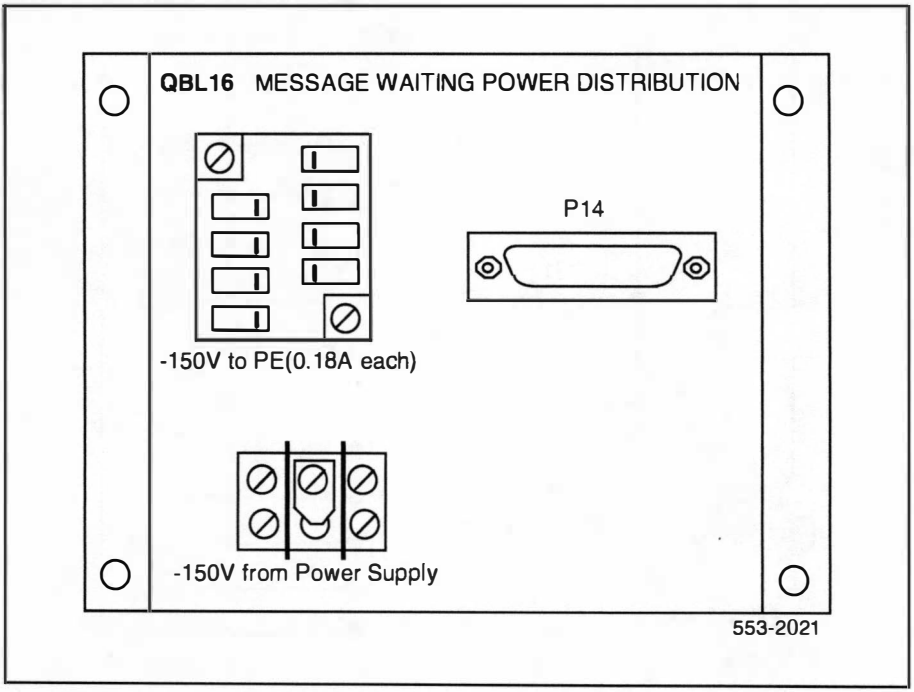
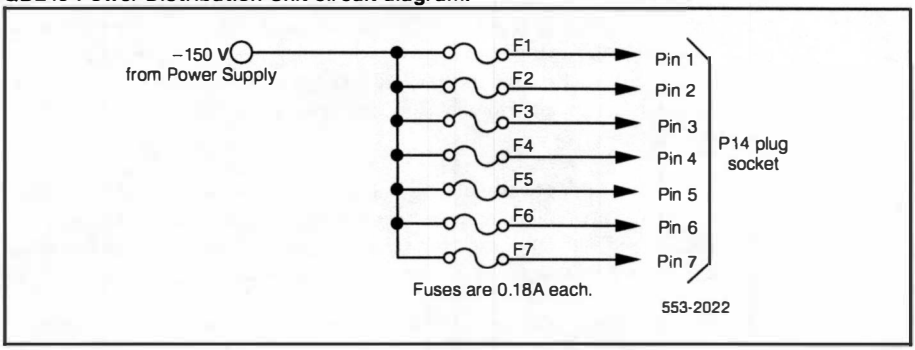


Figure 6
QBL16 Power Distribution Unit circuit diagram.



Mounting

The QBL16 is mounted between the center uprights in the bottom of the QCA7 cabinet in the same relative location as the power unit.

PE cabinets and shelves

The power unit and QBL16 Distribution Unit can be used with PE cabinets of the following vintages:

- QCA8: vintage E or subsequent
- QCA7: vintage D or subsequent
- QCA23, QCA28, QCA37: all vintages

These cabinets are equipped with wiring harnesses that incorporate a cable and P14 connector. The connector plugs into the P14 socket of the power unit or distribution unit, and the wiring harness provides −150 V dc power distribution to the PE shelves in the cabinet.

The cabinets used with the power unit or power distribution unit must contain shelves of the following vintages:

- QSD3, QSD7: vintage B or subsequent
- all other PE shelves: all vintages

Line circuit cards

The circuit cards used for the 500/2500-type telephones depend on the companding law used with a given system. In general, μ-Law companding is used in North America and A-Law companding in parts of Europe and Asia. These cards are based on the standard 500/2500 line cards but include –150 V lamp control circuitry for the neon lamps on the 500/2500 Message Waiting telephones.

The circuit cards are available in single density (four circuits per card) and double density (eight circuits per card) configurations. Single density cards can be used with all systems but are superseded by double density cards that can be used only with systems designed for double density equipment.

The following are the available single density 500/2500 Message Waiting line cards:

- QPC267 (μ-Law)
- QPC286 (A-Law)

Maintenance

Maintenance diagnostic programs are provided by the software to control and test the Message Center services. Message Waiting lamps and set indicators on Meridian products can be tested on a system basis. For a complete description of the overlay programs involved, and their operation, please refer to *Administration* (553-3001-311).

LD 32—Network/Peripheral Equipment Replacement Diagnostic

This diagnostic can be used to test the neon Message Waiting lamp on 500 and 2500 telephones. It can also be used to print out a list of any defective lamps. The telephones with Message Waiting key/lamp pairs are not included in this test.

LD 61—Message Waiting Lamp Reset (MWL)

This program can be set to run automatically as part of the Midnight Routines (MIDS) or can be run manually from a peripheral input device. LD 61 is used to reset the lamp and status for all telephones within the system. When run manually, the command G starts the program.

The program does not reset lamp status unless all Message Center telephones are out of service, as under Night Service conditions.

Power supply installation

Contents

This section contains information on the following topics:

QSY22 41
QBL16 42

QSY22

The Message Waiting power supply is installed according to the steps defined in Procedure 1 on page 42. The QSY22 Message Waiting power supply supersedes the QSY19 and can be mounted in any of the following cabinets:

- QCA8
- QCA23
- QCA28
- QCA37

The unit is mounted between the uprights immediately below the TBC (Figure 1 on page 33). To facilitate the installation of the Message Waiting power supply, you may have to move the TBC up. If you have to move the TBC do it before you start the steps of Procedure 1 on page 42.

> ***Note:*** The QSY22 includes the cables required for the –48 and –150 V power leads. The cabinet wiring harness may or may not contain a P14 plug, depending on whether or not PE is provided in the cabinet.

Procedure 1
Installing the QSY22 Message Waiting Power Supply

1 Set the input switch on the QSY22 power unit to OFF.

2 Remove the two flat-head screws securing the plastic shield over TB1 of the QSY22 unit.

3 Disconnect the lead assembly supplied with the QSY22 unit.

4 Position the QSY22 unit in the cabinet, and secure it with four mounting screws (Figure 1 on page 33).

5 Connect the BLACK lead (with two lugs) between the TB1 terminal 3 of the QSY22 unit and the ground bus in the center of the cabinet.

6 Connect the other BLACK lead (lug end) to the TB1 terminal 2 of the QSY22 unit and the ground terminal (1) of the TBC.

7 If the Message Waiting shelves and harness are provided in this cabinet, connect the P14 connector of the cabinet harness to connector P14 of the QSY22 unit.

8 Connect the RED lead (lug end) to the TB1 terminal 1 of the QSY22 unit and the other end to the –48 V terminal (3) of the TBC.

DANGER OF ELECTRIC SHOCK
This is a LIVE connection. Be careful when making this connection. Also, a short to ground could cause a complete loss of power to this cabinet.

9 Set the INPUT switch of the QSY22 to ON.

10 Test for –150 V at TB1 terminal 4.

11 If a QBL16 Distribution Box is to be provided in a companion QCA7 cabinet, perform the steps of Procedure 2 on page 43, then return to Step 12 of this chart.

12 Secure the plastic shield in place over TB1 with two flat-head screws.

QBL16

The QBL16 Message Waiting Power Distribution Box is installed by following the steps in Procedure 2 on page 43. This unit is mounted in the QCA7 companion cabinet next to the cabinet containing a QSY22 or QSY19, and in the same relative location within the cabinet as the QSY22/QSY19.

Procedure 2
Installing the QBL16 Message Waiting Distribution Box

1 Position the QBL16 unit in the QCA7 cabinet, and secure it with four mounting screws.

2 Remove the –150 V dc output fuse from the QSY22/QSY19 Power Supply (F8, 1.33 A).

3 Run the QCAD2 power cable between the QSY22 (or QSY19) Power Supply and the QBL16 Distribution Box.

4 Connect one end of the QCAD2 cable to the terminal on the QBL16 (Figure 5 on page 38).

5 Connect the other end to the terminal TB1-4 of the QSY22 Power Supply (Figure 1 on page 33). In the case of the QSY19 Power Supply, connect it to terminal TB1-3 (Figure 3 on page 36).

6 Connect the P14 plug from the QCA7 wiring harness to the P14 socket on the QBL16.

7 On the QSY22/QSY19 Power Unit, replace the –150 V dc output fuse.

8 Test for –150 V dc at TB1 of the QBL16 Power Distribution Box.

Feature interactions

ACD Message Center

The operation of ACD Message Center telephones is basically the same as an ACD system with incoming call queues and available agent queues. The ACD Message Center cannot operate in combination with an Attendant Message Center. However, if all telephones are in the Make Busy mode (not logged in), Message Center calls can be routed to the attendants who can then function as the Message Center. Queue overflow features are allowed for a Message Center ACD DN in the same way as any other ACD system with the properly equipped package. Other ACD features such as RAN, music, and so on, operate as for a normal ACD system with the appropriate packages.

A Message Center operator cannot originate calls on the MSG IN-CALLS key; therefore, originating features are not applicable on this key. Separate DN keys must be provided for these functions.

DN Message Center

The Message Center DN must be the prime DN; otherwise, all normal features can be assigned to this DN.

Attendant Message Center

Once a call is extended to an ACD Message Center by an attendant, it is released completely from attendant operation and, Recall, Camp-On, and so on, and cannot be activated. For calls extended to a DN Message Center, normal attendant functions, such as Recall and Camp-On, can be used. Other attendant functions operate normally.

Call Forward (All Calls)

Call Forward should be denied at telephones serving as the Message Center. On a telephone basis, Call Forward takes precedence over the Message Center. If a call is forwarded to another telephone, activation of Message Waiting depends on whether or not the second telephone has Message Waiting Allowed.

If the system is equipped with software Release 19 or later, Call Forward Message Waiting dialtone can be provided to 500/2500 type telephones as an indication that Call Forward All Calls is active and a message is waiting at the message center.

Call Forward (Internal Calls)

The Message Center treats Internal CFW in the same way as Call Forward All Calls (CFAC).

If the system is equipped with software Release 19 or later, Call Forward Message Waiting dial tone can be provided to 500/2500-type telephones as an indication that Call Forward, Internal Calls is active and a message is waiting at the Message Center.

Call Forward Busy (CFB)

CFB should be denied on telephones serving as the Message Center. An option is provided to allow DID calls to a busy telephone to be routed to the Message Center. If this option is selected by the customer, Message Waiting takes precedence over the customer-defined path for CFB.

Call Forward No Answer (CFNA)

CFNA should be denied at telephones serving as the Message Center. On a telephone user basis, Message Waiting takes precedence over the customer-defined path of CFNA.

The capability to light and extinguish Message Waiting lamps can be used with CFNA to simulate a Multiple Message Center. Any telephone equipped with message lamps, but without Message Waiting Allowed class of service, can use CFNA to specified DNs on the telephones equipped with MSG INDIC and MSG CANC key/lamp pairs.

These telephones have the capability to light or extinguish Message Waiting lamps by manually entering the DN of the telephone for which a message was taken. Call processing is the normal call processing for CFNA, not the Message Center call processing. When a call is forwarded, the MSG INDIC lamp does not light, since this is not true Message Center operation.

Call Transfer/Conference from 500/2500 telephones

Message Waiting interrupted dial tone is not provided when the user flashes the switchback to activate Call Transfer or Conference. The normal dial tone for this purpose is provided.

Flexible CFNA to any DN

Flexible CFNA to any DN forwards unanswered calls to a predesignated CFNA DN. All telephones with Message Waiting Allowed have the CFNA DN assigned to the Message Center regardless of whether Flexible CFNA has been selected by the customer or whether CFNA is allowed or denied for the telephone.

Hunting

Hunting should be denied at telephones serving as the Message Center. On a user basis, Hunting takes precedence over Message Waiting. However, Message Waiting can be activated after Hunting, provided the hunted telephone is Message Waiting Allowed and does not answer the call. If desired, the MC DN can be specified as the hunt number.

Listed Directory Number

A Message Center can be assigned to a Listed Directory Number (LDN) and behaves in a similar manner to an Attendant Message Center. The calls come in on an LDN ICI instead of the MSG CENTER ICI, and direct message calls do not activate the MSG CANC key. The operator must access the user telephone directly to cancel that telephone's Message Indication.

Ring Again for 500/2500 telephones

Message Waiting interrupted dial tone is not provided when the user flashes the switchback to activate Ring Again. For this purpose, the normal dial tone is provided.

User Selectable Call Redirection (USCR)

USCR allows the user to perform the following two tasks:

- To assign the four redirection DNs from the telephone. These DNs include the CFNA DN and the external CFNA DN (if it exists).
- To change the way the number of ringing cycles are defined for Flexible Call Forward No Answer (CFNA). One of three options can now be selected from the telephone.

This feature does not support Basic Rate Interface (BRI) telephones.

Message Center packaging

If an ACD Message Center is not required, the customer must order only the Message Center package. However, if an ACD Message Center is required, the appropriate ACD package should be ordered in addition to Message Center. An option for the ACD Message Center is the Integrated Messaging System (IMS).

Note that an ACD package is required if an Attendant Message Center is accessed by an MSG CENTER ICI key. This is required for the Phantom ACD DN associated with the MSG CENTER ICI key. Refer to *Automatic Call Distribution: Feature Description* (553-2671-110).

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Meridian 1 and Succession Communication Server for Enterprise 1000

Message Center

Description and Operation

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NORTEL NETWORKS™

Meridian 1 and Succession Communication Server for Enterprise 1000

Message Registration

Description and Operation

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About this document

This document applies to Meridian 1 Internet Enabled and Succession Communication Server for Enterprise (CSE) 1000 systems.

This document is a global document. Contact your system supplier or your Nortel Networks representative to verify that the hardware and software described is supported in your area.

This document provides description and configuration information for Message Registration (MR).

Who should use this document

This document is intended for individuals responsible for Message Registration (MR) administration

Description

Contents

This section contains information on the following topics:

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Trunk-to-trunk calls 12
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Feature packaging 12
Feature implementation 13
Feature operation 13
Hardware description 13
Trunk circuit cards 13
Reverse Battery operation 14

Reference list

The following are the references in this section:

- *Circuit Card: Installation and Testing* (553-3001-211)

Message Registration (MR) is an optional software package that meters local calls over designated central office (CO) trunks. The Message Registration (MR) feature counts Reverse Battery (RVB) pulses from outgoing loop start or ground start CO trunks. Pulses received are stored in software meters. Each meter is assigned to a Directory Number (DN) or trunk access code that requires metering.

The Message Registration feature allows each customer within the system to keep an accurate record of CO calls for billing and administration purposes.

- Each Directory Number (DN) of three or more digits, including the attendant DN, can be assigned a software meter. For multiple appearance DNs, only one meter is assigned to meter all calls to the Prime DN (PDN). Stations with multiple DN keys have a meter allocated for each DN key.
- Meters can also be assigned to tie trunk routes. A tie route meter can be assigned to the route access code of each tie route in the customer group. An access code for a metered route must be at least three digits long.
- The system automatically assigns one customer meter for each customer within the system. This customer meter is used to store pulses that cannot be added to particular DN or trunk meters assigned in the customer group.

Software meters are assigned in LDs 10 and 11. Each meter number corresponds to the DN or trunk access code to which it is assigned. Meters can be either ON or OFF. When a meter is turned off, pulses received are not stored. The customer meter is always on and cannot be turned off. Meters can also be turned on or off individually or in groups, using a background terminal (BGD).

Each software meter can store up to 32,766 pulse counts before automatically resetting to 0. When a meter is reset, a message is printed on the system maintenance terminal, the BGD, or both, indicating that a reset occurred. Overflow messages display information on meter contents for any DN or trunk access code requested:

- Station or trunk TN
- Station DN or the trunk-access code
- Trunk TN (outgoing CO trunk used for the call)

- Customer number for their station or trunk
- Meter count before reset (32766)

The message for a customer meter overflow appears as follows:

CUST MTR xx OVF 32766

When equipped with the MR feature, the system is capable of the following provisions:

- Attendants are able to meter outgoing local calls over CO routes.
- Meter contents are accessible from digital telephones equipped with digit display and a Message Registration key/lamp pair.
- Meter contents are also accessible from BGDs.

The system uses class of service (COS) to distinguish between room phones and administrative phones. Room phones have Controlled COS Allowed (CCSA), while administrative phones have Controlled COS Denied (CCSD). Call charges and meter data provided to the attendants appear on the BGD and are classified into five categories:

ROOM	guest room DN (CCSA)
ADMN	administrative phones (CCSD)
ATTN	attendant consoles
TRK	outgoing CO trunks
CUST	customer DNs

Operating parameters

The MR package must be supported by a BGD with Controlled Class of Service Allowed (CCSA). The feature is not supported by attendant administration.

MR is mutually exclusive with Coordinated Dialing Plans (CDPs), and Centralized Attendant Services (CAS).

One-digit or two-digit DNs or access codes cannot be metered.

Feature interactions

Multiple Appearance Directory Numbers

Multiple Appearance DNs are charged on the meter assigned to the Prime DN (PDN). Data calls are charged to the originating telephone. Maintenance tests on metered trunks do not affect the metered values.

Call Transfer

Only the party originating the Call Transfer is metered.

Call Forward

On calls where the Call Forward feature is used, the last party to forward the call is metered. This applies to cases where a CO call originates from a Call Forward station, and to cases where an established CO call is transferred to a station that is forwarded to another internal station.

Conference

Only the party originating the Conference Call is metered.

Trunk-to-trunk calls

Metering of trunk-to-trunk calls using an outgoing CO trunk is not supported if the trunk access code is a one-digit or two-digit access code. Otherwise, a meter corresponding to the trunk access code of the metered trunk route is incremented. Only three-digit and four-digit codes are supported for DNs or trunk access codes.

Attendants

For attendant-originated calls to CO trunks, the attendant meter is incremented. When the call is extended, the attendant is metered until a telephone within the Meridian 1 is added to the conference. When the attendant uses a loop key, the call is metered to the Room DN connected through that key; otherwise, the attendant meter is incremented.

Feature packaging

This feature is included in base System Software.

Feature implementation

Each CO route must be declared as metered or nonmetered in LD16, trunk route data block. Calls should not be allowed to overflow from metered to nonmetered routes.

A software meter must be assigned in the Customer Numbering Plan to each DN or trunk access code for which metering is desired.

Feature operation

No specific operating procedures are required to use this feature.

Hardware description

MR is supported on Options 51C, 61C, and 81C.

Trunk circuit cards

One of the following trunk circuit cards must be used for trunks where metering is required.

- NT5D29AA
- NT5K18Ax
- NT5K82
- NTCK16Ax
- NTCK18
- QPC525
- QPC526

The choice of card depends on two factors: whether the trunks involved are loop or ground start, and whether system operation is A-law or μ-law.

Refer to *Circuit Card: Installation and Testing* (553-3001-211) for switch settings, connections and pad settings

Reverse Battery operation

When the CO trunk returns a Reverse Battery (RVB) signal, only one pulse is received for each outgoing call. This pulse is passed to the software meter for storage. The meter is incremented once for each metered local call regardless of duration. Reversals received within 2 seconds of digit outpulsing completion are ignored.

Operation

Contents

This section contains information on the following topics:

Reference list 15
Metering 15
Background terminal command summary 16
Setting room meters 16
Selecting a single DN 16
Selecting Multiple Appearance DNs 18
Access to meters 19

Reference list

The following are the references in this section:

- *Background Terminal Facility: Description* (553-2311-316)

Metering

Metering is applied on a route basis. When setting up a customer for the feature, CO routes that are to be metered should only have access to routes that are metered. Calls should not be allowed to overflow to a nonmetered route. The Background Terminal (BGD) and the Meridian digital telephones can show the accumulated number of calls for each DN meter assigned.

Background terminal command summary

The following four MR options can be set from a BGD:

AL1	Value set for all Room DNs in the customer data block
X	Represents all possible values for a digit in a DN, so that nonsequential DN groups can all be set to the same value
RAnge	Sequential range of DNs can be set by entering the first and last DNs for the group
COnfirm	Response to the SEt command for verification

For a complete and detailed description of all the BGD commands, refer to the *Background Terminal Facility: Description* (553-2311-316).

The general command format for the BGD appears as follows:

SEt OPtion <opt> ON
SEt OPtion <opt> OFF

<opt> = any combination of AL1, X, RA, and CO

All of the commands for the BGD/MR can be turned on or off with the following commands:

SEt OPtion ON
SEt OPtion OFF

MR commands are described in Table 2 on page 18. The following examples demonstrate some MR operations.

Setting room meters

When setting room meters for a group of consecutive DNs, the second DN entered must be greater than the first DN entered. The value set for each meter must be between 0 and 32766. The confirm option must be set to get a response for input commands.

Selecting a single DN

Enter the following command to set meter 1246 to a value of 9:

SE ME 1246 VA 9

If the global COnfirm command is switched on, the following response appears (if the meter had previously been switched off):

ME 1246 OFF TO 9

Enter the following command to set meter 1246 to a value of 0 (either ZEro or VAlue 0):

SE ME 1246 ZE or SE ME 1246 VA 0

Enter the following command to switch meter 1246 off:

SE ME 1246 OFF

Once a meter has been set, a series of command lines consisting of only DN and meter values can be entered as shown in Table 1 on page 17:

Table 1
MR commands

Command Line	Typical Response
SE ME 1246 VA 10	METER 1246 OFF TO 10
1248	METER 1248 OFF TO 10
1257 20	METER 1257 9 TO 20
1259 0	METER 1259 64 TO ZERO

This mode stays in effect until a nonnumeric entry is typed.

Note: In a list, the number 0 is used, instead of ZE.

The customer meter can be accessed using similar commands, but it cannot be turned off as other meters can. CUstomer can be added to the end of a command accessing other meters, as shown in the following sample commands:

SE ME CU VA 9

(PR) ME CU

(PR) ME 1200 1205 CU

Selecting Multiple Appearance DNs

Enter the following command to set meters 1240 to 1249 to a value 9 using the inclusive range (dn1 dn2) method:

SE ME 1240 1249 VA 9

Enter the following command to set meters 1240 to 1249 to a value of 9 using the "X substitution" method:

SE ME 124X VA 9

Enter the following command to set all meters to a value of 9:

SE ME AL VA 9

Table 2 on page 18 summarizes the MR set commands.

Table 2
MR set commands

Command line					
(AU hhmm)	(PR)	MEter	dn	VAlue	nnnnn (SEt command only)
	FInd		dn1 dn2	ZEro	
	SEt		dnX	ON	
	"port ID"		ALl	OFf	
			CUstomer		
				DIsplay	(ON)
					OFf
				ALl	(see Note)
Note: In all conditions including zero; but not after SEt command.					

Access to meters

Meters are accessed from a standard data terminal (TTY) or a Display Telephone equipped with a Message Registration key/lamp pair. The TTY must be defined in the configuration record as a BGD. The BGD can be used exclusively for meter access to the two background features Automatic Wake Up (AWU) and room status information (RMS), or it can be shared with other functions:

- Erase the pulse count units stored on a meter.
- Change the pulse count units stored on a meter.
- Search for nonzero meters (TTY only).
- Read the pulse count units stored on a meter.
- Print the pulse count units stored on meters (TTY only).

Note: Access to the customer's meter is allowed from the BGD only.

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Meridian 1 and Succession Communication Server for Enterprise 1000

Message Registration

Description and Operation

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NORTEL NETWORKS™

Meridian 1

Buffer Interface/Protocol Converter

Description

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General information

Reference list

The following are the references in this section:

- *Background Terminal Facility Description (553-2311-316)*
- *X11 Features and Services (553-3001-306)*
- *X11 Administration (553-3001-311)*

This document contains descriptions, installation and operating procedures, ordering information, and specifications for the Buffer Interface/Protocol Converter (BIPC).

Before starting the Buffer Interface/Protocol Converter (BIPC) installation, coordination with LODGISTIX or your In House System (IHS) is necessary. The IBM series 1 hardware and software must be modified as per specifications from LODGISTIX or IHS for PBX Interface. Operating without the correct modifications may cause the Buffer Interface/Protocol Converter (BIPC) to fail or damage the hardware.

The BIPC provides the necessary interface and communication protocol for connecting a customer-provided Property Management System (PMS) through a Serial Data Interface (SDI) port to the switch. The PMS could consist of a LODGISTIX or In House System (IHS) computer.

When installed (Figure 1), the BIPC provides

— two bidirectional, RS-232-C ports for connecting to a Serial Data Interface (SDI) port on one side, and the Property Management System (PMS) data port on the other side

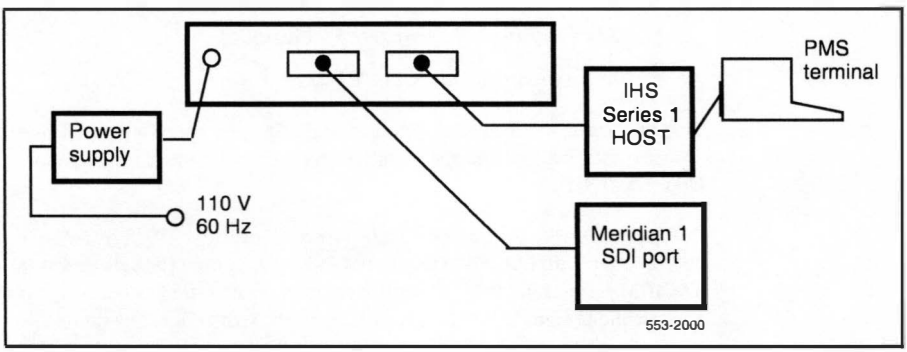
— data buffering at both ports for the transfer of serial message data between the Meridian 1 and the Property Management System (PMS)

— the communication protocol required to automate communication between the Meridian 1 and PMS

Note: In this document, Meridian 1 refers to SL-1 systems as well as the Meridian 1 system options available with X11 release 15 and later.

You can use the BIPC with all Meridian 1 systems. A typical application is for Room and Maid Status control on a system equipped with the hospitality features.

Figure 1
Simplified BIPC installation diagram



Test equipment

The following test equipment is recommended for installation and troubleshooting:

— 1 Async datascope

— 1 ASCII terminal or TTY

References

Refer to the following publications for details concerning hospitality features:

— *Background Terminal Facility Description (553-2311-316)*

— *X11 Features and Services (553-3001-306)*

— *X11 Administration (553-3001-311)*

For details of the standards and specifications referred to in this document, consult the following documents:

— EIA Standard RS-232-C
Interface between Data Terminal Equipment (DTE) and Data Communication Equipment (DCE) employing serial binary data interchange

— CCITT Recommendation V.24
List of definitions for interchange circuits between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCT)

— ISO Standard 2110-1980
Data Communication, 25-pin DTE/DCE interface connector and pin assignments

Note: EIA RS-232-C and CCITT V.24 are equivalent standards.

Description

The BIPC is a single unit in a metal housing with an external power supply. The overall dimensions of the unit are approximately 14 x 2.5 x 7 in. (356 x 64 x 178 mm).

The front panel of the BIPC has the following characteristics:

— two LEDs, labeled PORT A and PORT B, to indicate when data is received into the applicable interface port of the BIPC

— one LED to indicate when power is applied to the BIPC

— a RESET push-button switch for initializing the BIPC operation

Two 25-pin female connectors are mounted on the back panel and labeled A and B. These are the RS-232-C interface connectors for the Meridian 1 and PMS connections.

The top cover of the unit is secured with four screws. You can remove the top cover to access the option switches and jumpers, and other components mounted within the unit. Figure 2 shows the layout of the components.

Power for the BIPC is connected from an external power supply. The 5-wire cable from the power supply is connected to the power connector at the back right corner of the BIPC. It provides + 5, + 12, –12 V dc, ground and chassis ground connections.

The power supply dimensions are 4.75 x 2.75 x 2.25 in. (121 x 70 x 57 mm). See Figure 3. The unit is equipped with the following two power cables:

— a 3-wire, input power cord approximately 6 ft (1.8 m) long, with a standard, UL/CSA approved plug for connection to a standard 3-pin, 110 V, 60 Hz, AC power outlet

— a 5-wire output power cable, approximately 7 ft (2.1 m) long, with strain relief and a connector for connection between the power supply and the BIPC

Note: RS-232-C cables to interface to and from the BIPC are not included and must be supplied locally.

The BIPC provides the interface between a Meridian 1 and a PMS. It can operate at different data rates, use different data handling characteristics, or have similarly incompatible serial data interface (SDI) circuits. The BIPC is factory set for 9600 baud.

The RS-232-C interfaces between the circuits and the buffering needed for the interchange of serial data between the two data terminals. The functions and protocols automate the transfer of messages across the BIPC interfaces and the data links between the data terminals.

All BIPC functions are controlled by a Z80 microprocessor. Operating system storage is provided by an EPROM device (Figure 2). BIPC initialization occurs when power is applied to the unit, or when the RESET switch on the front panel is pressed.

The two 25-pin female connectors (DB25S), labeled A and B, are compatible with ISO Standard 2110-1980 for pin configuration and numbering. They provide the physical (electrical/mechanical) interface ports for the data links to the Meridian 1 and PMS. The connectors, and the RS-232-C circuits provided on them, are illustrated in Figure 4. The two ports can be operated at independent data rates up to 9600 baud. However, 9600 baud on the Meridian 1 port and 1200 baud on the PMS port are used in this application. The word format (code structure and buffer control) of the PMS port is selectable, but the port is hardwired for 8-bit data, one stop bit and no parity. Data buffering to facilitate transfer of data between the independently operated ports is provided by 2 K of RAM (Figure 2).

Figure 2
BIPC component layout diagram

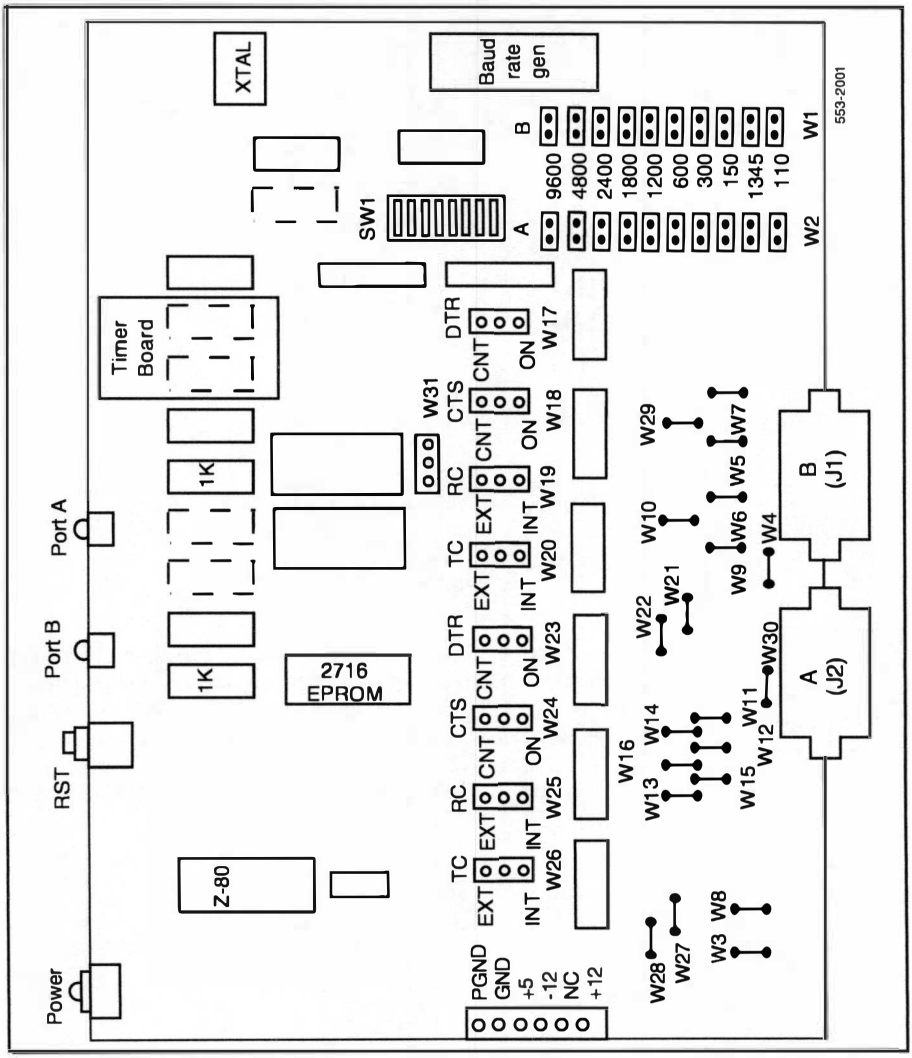
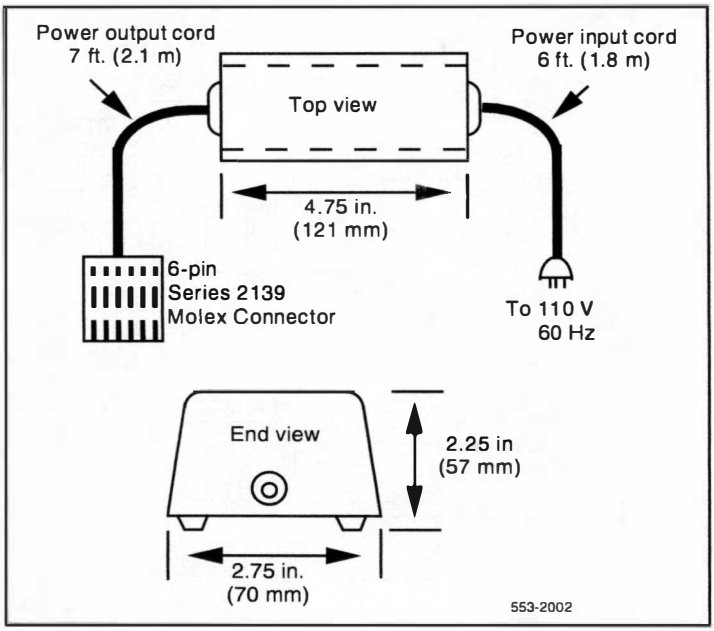
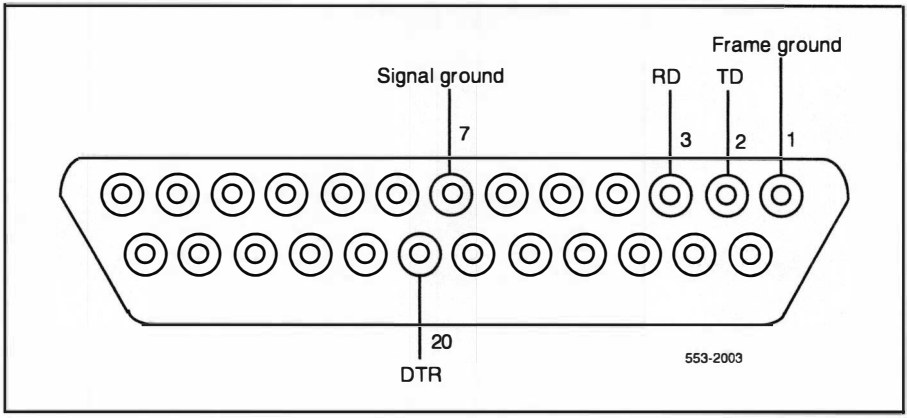


Figure 3
Power supply (A0297998)



Both BIPC ports are wired to represent data terminal equipment (DTE). For normal connections to the data communications equipment (DCE) at the Meridian 1 and the PMS, RS-232-C cables fitted with 25-pin connectors are required. The cables must include straight-through connections between pins 1, 2, 3, 7, and 20 on the two connectors to provide RS-232-C interchange circuits AA, AB, BA, BB, and CD between the BIPC and the DCE (Figure 5).

Figure 4
BIPC interface connectors and interchange circuits



The BIPC provides the necessary conversions between the different protocols used by the two data ports to control the flow of serial data across the data links. In addition to logic for independent control of the physical links between the BIPC and the two data terminals, the BIPC also provides message handling protocol between the PMS and the BIPC. Because the link from the SDI port does not use message handling protocol as such, the BIPC adds the required protocol characters to messages originating from the Meridian 1, and conversely strips the control protocol from PMS-originated messages before transferring the message body to the Meridian 1.

The BIPC also provides error control functions as part of the message handling. Since the SDI ports do not use parity checks, the BIPC adds parity bits to the serial data sent to the PMS if parity is enabled on the option switch (SW1). It also detects parity bits in the data stream from the PMS, performs Block Character Checks (BCC) for error detection and then removes the parity bits before sending the message body to the Meridian 1. If errors are detected, the BIPC initiates error recovery procedures.

Interface circuits and protocols

BIPC protocol requirements

The BIPC provides the following capabilities:

— transmits messages originated by either the Meridian 1 or the PMS across the BIPC interface

— overrides PMS originated messages by Meridian 1-originated messages, if the messages are originated simultaneously. Messages are interrupt driven on the Meridian 1 side and protocol driven on the PMS side.

— does not reformat the message body

— uses asynchronous, RS-232-C data handling at up to 9600 baud

— adds one parity bit to each Meridian 1-generated 8-bit data byte

— strips parity bits from the PMS generated data stream

— uses message control (message envelope) characters at the BIPC/PMS interface as defined in Table 1

— uses interchange protocol, message envelope, and responses at the BIPC/PMS interface as described later

The protocols used between the two data terminals can be classed as follows:

— Link Control to handle the establishment, take down, and maintenance of the data links, and the flow of serial data across the links

— Message Control to handle the exchange of the actual message body across the BIPC interfaces between the two terminals

BIPC initialization

The BIPC is initialized when power is applied, or when the RESET button is pressed. The BIPC sends a carriage return <CR> to the Meridian 1 and waits until it responds with the period (.) prompt character (hex 2E). The BIPC dumps any characters received before the prompt. When the prompt character is received, a flag is set in the BIPC indicating that the Meridian 1 is active. When an Enquiry (ENQ) is received from the PMS, the flag is checked. If the flag is set, the BIPC responds to the PMS with Acknowledged (ACK). If the flag is not set, the BIPC responds with Not Acknowledged (NAK).

Link control

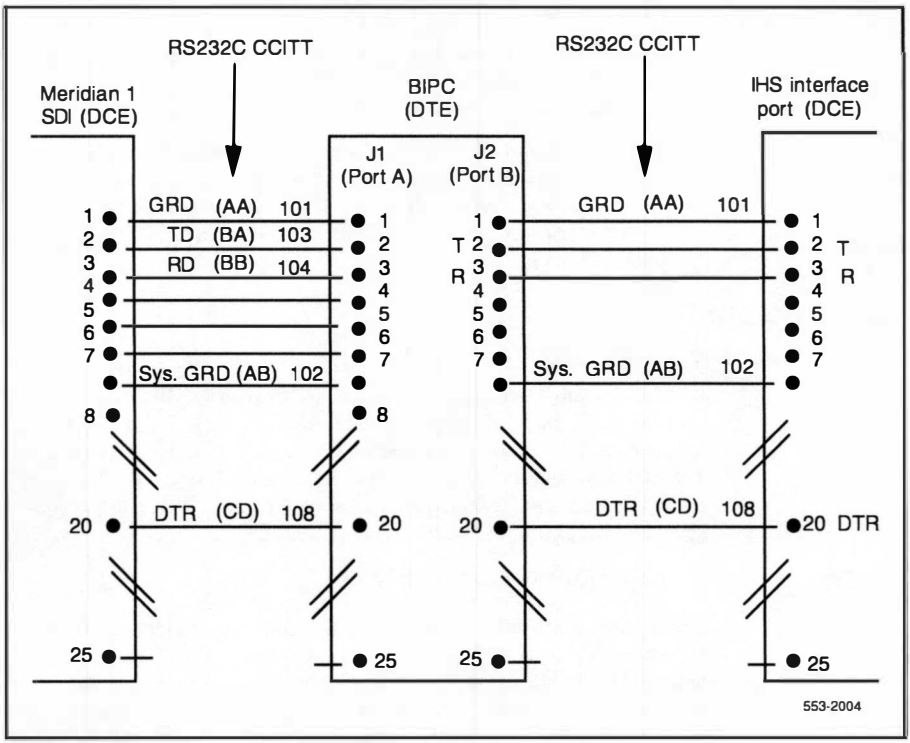
The data interchange between the BIPC and the two data ports (Meridian I and PMS) is on data links using RS-232-C link control functions (Figure 5).

The RS-232-C interchange circuits required at each of the two interface ports appear in Figure 5. The figure includes RS-232-C, CCITT V.24, and Meridian 1 SDI circuit designations for cross-referencing and to show the functions of the circuits in BIPC operation. For more details on the interchange circuits, refer to the applicable standard (RS-232-C or CCITT V.24).

The Specifications section of this document summarizes the electrical characteristics of the interface circuits for Meridian 1/PMS applications.

Several options provide logical control of the data links. You select the options independently by changing the jumpers on the ports (Figure 14). A PC board layout drawing is necessary for changing the jumpers.

Figure 5
BIPC interface connections and functions



The following options are available:

— Data Terminal Ready (DTR) (on connector pin 20) is strapped continuously on.

— Block Character Checks (BCC) is either on or off. With PMS, this option is set on by the factory and is set off only if the PMS cannot use or generate BCC error control.

— Word format Port A (to the Meridian 1) is always configured for a word format of one start bit, 8 databit, no parity, and 1 stop bit. Port B (to the PMS) word format is switch selectable (switch module SW1). The word format appears in Figure 6. The BIPC is factory set for 7 data bits, even parity, 1 start bit, and 1 stop bit.

Message control

Message envelopes

BIPC/PMS link The envelope for messages between the BIPC and the PMS uses the ASCII-encoded control characters listed in Table 1. In addition, each message block terminates with a Block Character Checks (BCC) character. The BCC maintains message integrity, and is an Exclusive-OR of all bytes following the Start of Text (STX), including the End of Text (ETX). The general message format from the sender follows:

ENQ STX (message body) ETX BCC

BIPC/ Meridian 1 link The Meridian 1 does not support a message protocol. Messages are simply transmitted into the Meridian 1 when it is ready, as indicated by the prompt character. The input message to the Meridian 1 is Message <CR>, which it echoes back to the BIPC (echoplex). The terminating <CR> indicates the end of a message. The protocol from the Meridian 1 to the BIPC follows:

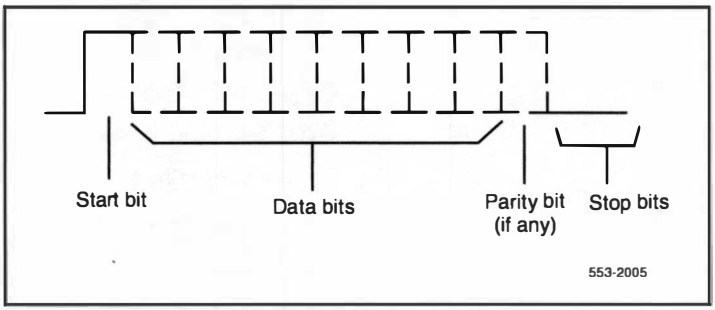
CR	LF	nul	nul	nul	nul	nul	nul	Message Body
CR	LF	nul	nul	nul	nul	nul	nul	Message Body
CR	LF	nul	nul	nul	nul	nul	nul	(prompt)

Note: The number of message lines sent before the prompt depends on the command and the Meridian 1 software.

Message protocol and responses

The BCC follows the End of Text (ETX) character in the transmission, and the receiver immediately performs a verification check. If the BCC is correct, the receiver responds with Acknowledged (ACK). If the BCC does not match, the receiver responds with Not Acknowledged (NAK).

Figure 6
Word format



The port is always configured for 8 data bits, no parity, and 1 stop bit. The PMS port word format is switch selectable.

The sender does not transmit a new message until it either receives an Acknowledged (ACK) response to the previous message, or until it makes three attempts (ENQ) to send the message and receive an ACK. If the required ACK is not received after three tries or within a 20-second delay from the time the ENQ is received, the sender flushes the message.

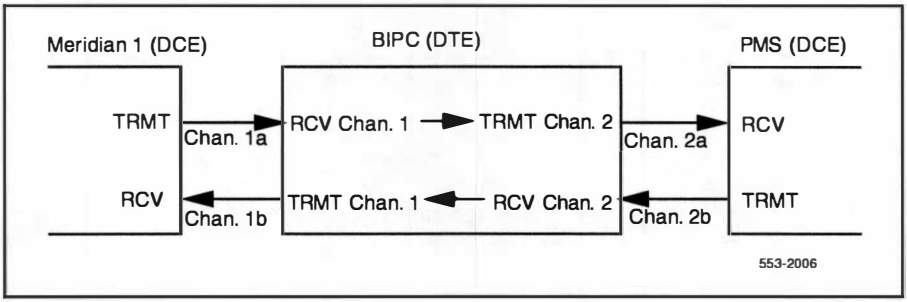
Message priorities

A receiver may not interrupt a transmitter in the middle of a message. If the PMS is sending to the BIPC, the BIPC waits until it has responded with an ACK or Not Acknowledged (NAK) before sending any character. Similarly, if the BIPC is sending to the PMS, the PMS waits until it responds with ACK or NAK before sending any characters to the BIPC. However, a one-second time out between characters violates the message specifications and allows the receiver to terminate reception of that message.

Table 1
Message control and special character definitions

Character	HEX code	Definitions
Control characters		
ENQ	05	Enquiry: solicits a response from the other terminal — from the sender, asking the receiver if it is ready to receive a message — from the receiver, asking the sender to send or resend a message
STX	02	Start of Text: message body follows
ETX	03	End of Text: end of message body
BCC		Block Character Check (optional)
ACK	06	Acknowledge: affirmative response from the receiver to the sender (if BCC is used, ACK also indicates BCC check matches)
NAK	15	Not-Acknowledged: negative response from the receiver to the sender (for example, not ready to receive a message or a block of data received with errors requires retransmission)
Special characters		
<CR>	0D	carriage return (or equivalent)
lf	0A	line feed (or equivalent)
.	2E	ASCII character period (prompt character for Meridian 1)
00	00	Null (nu) character
xx		represents any hex number

Figure 7
BIPC connection diagram with communication channels



Examples

The examples appearing in Figures 8 through 12 illustrate applications of the message protocols under both normal and error conditions. The diagram in Figure 7 illustrates the message channels implied in these examples:

Figure 8 Valid transaction example
(message from PMS to Meridian 1)

Figure 9 Invalid format example
(control character in message body from PMS to BIPC)

Figure 10 Transaction with error example
(BCC mismatch in the BIPC to PMS message)

Figure 11 Valid transaction example
(single message from Meridian 1 to PMS)

Figure 12 Valid transaction example
(multiple messages from Meridian 1 to BIPC)

Figure 8
Valid transaction example (message from PMS to Meridian 1)

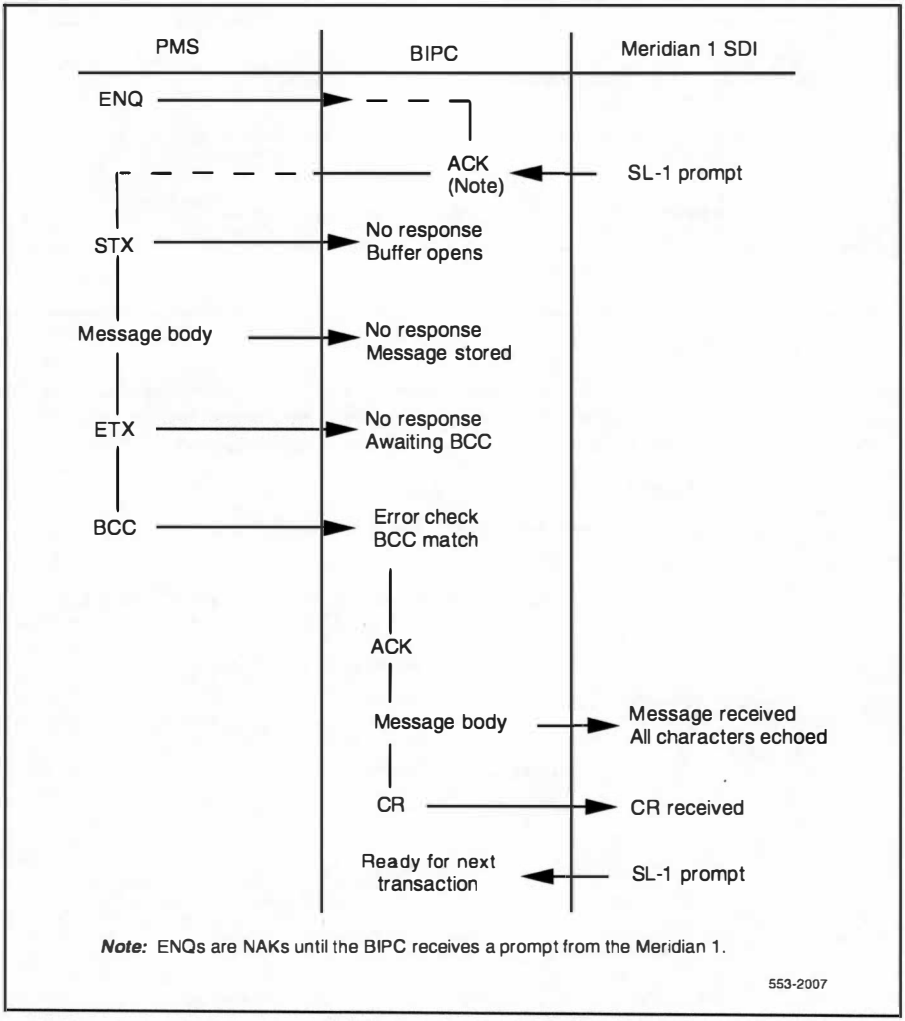
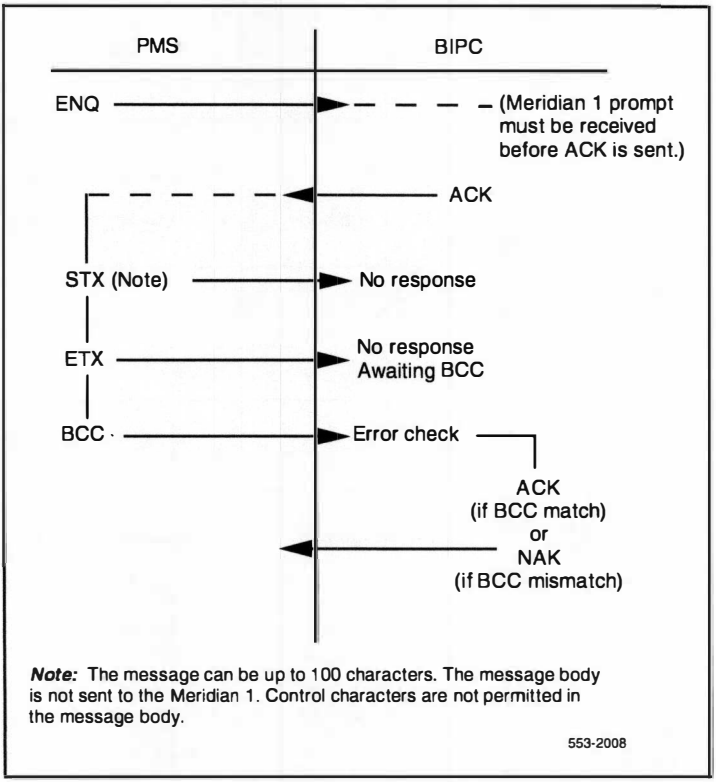


Figure 9
Invalid format example (control character in message body)



Note: The message can be up to 100 characters. The message body is not sent to the Meridian 1. Control characters are not permitted in the message body.

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Figure 10
Transaction with error (BCC mismatch in the BIPC to PMS message)

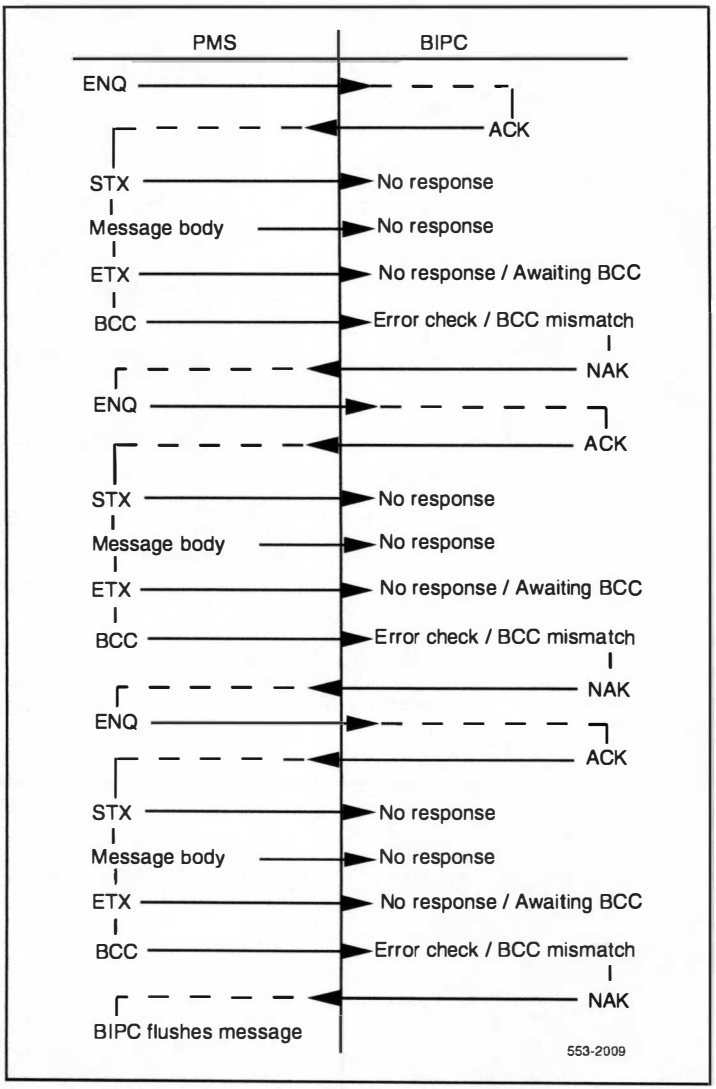


Figure 11
Valid Transaction (a single message from Meridian 1 to PMS)

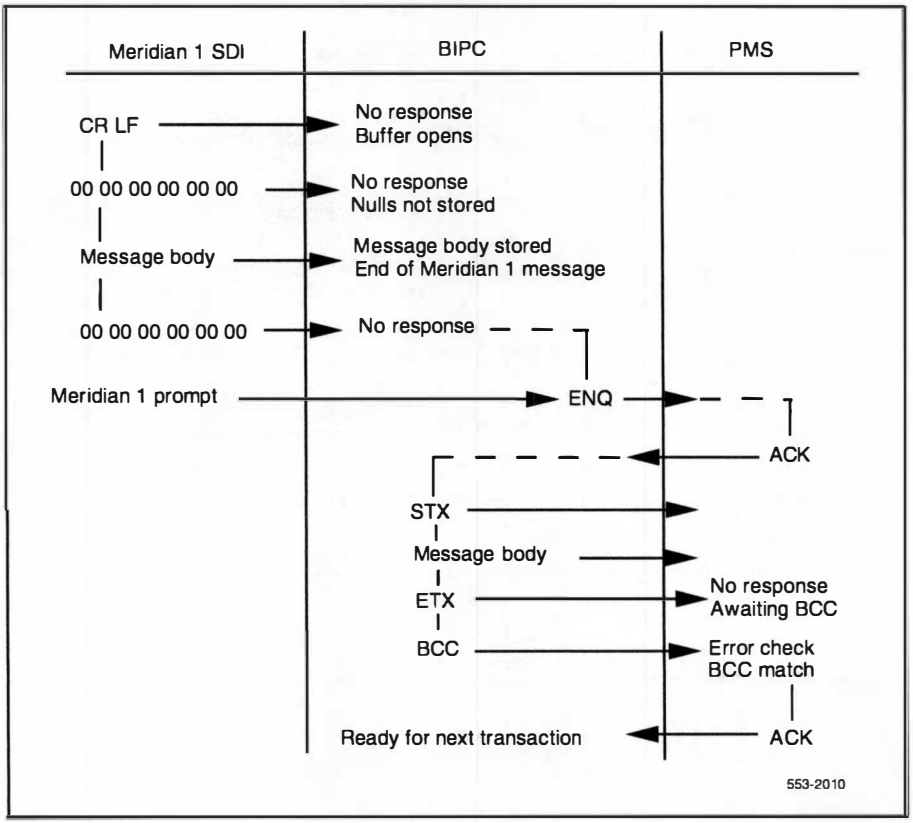
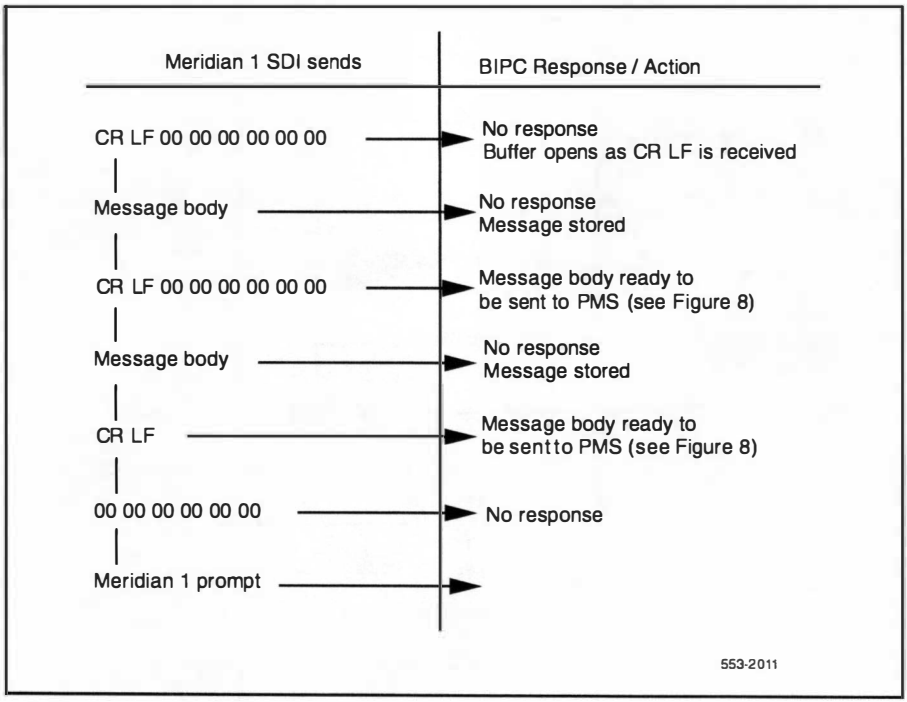


Figure 12
Valid Transaction (multiple messages from Meridian 1 to BIPC)



Installation

Reference list

The following are the references in this section:

- *Circuit Card Installation and Testing (553-3001-211)*

Mounting location

Mount the BIPC at any convenient location that meets or exceeds the following requirements:

— The cable length from the BIPC to the Meridian 1 SDI and to the PMS must not exceed 50 ft (15 m). If the distance is greater than 50 ft, use a short-haul modem or a line driver.

— The power supply (Figure 13) must be located so that the BIPC is within reach of the output cable (approximately 7 ft. [2.1 m]). A 110/120 V, 60 Hz, 3-pin power receptacle is within reach of the power supply power cord (6 ft. [1.8 m]).

To prepare the BIPC mounting location, clear sufficient space for setting the BIPC and the power supply on a flat surface approximately 15 x 8 in. (381 x 203 mm) for the BIPC and 5.5 x 3 in. (140 x 76 mm) for the power supply. A recommended location for the BIPC is on the top of the Meridian 1 cabinet, with the power supply beside or on top of the BIPC.

Unpacking and inspection

Unpack and inspect the equipment as detailed in Procedure 1 on page 35.

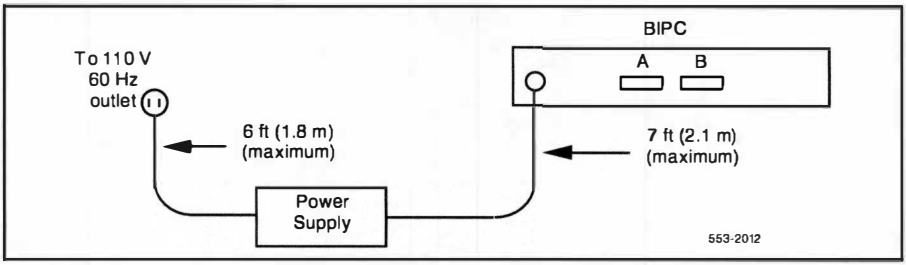
Option settings

Use the steps in Procedure 2 on page 35 for selecting the options.

SDI options

Set the address and speed switches on the SDI circuit pack. See *Circuit Card Installation and Testing (553-3001-211)* for the settings for your particular SDI card.

Figure 13
BIPC power cabling

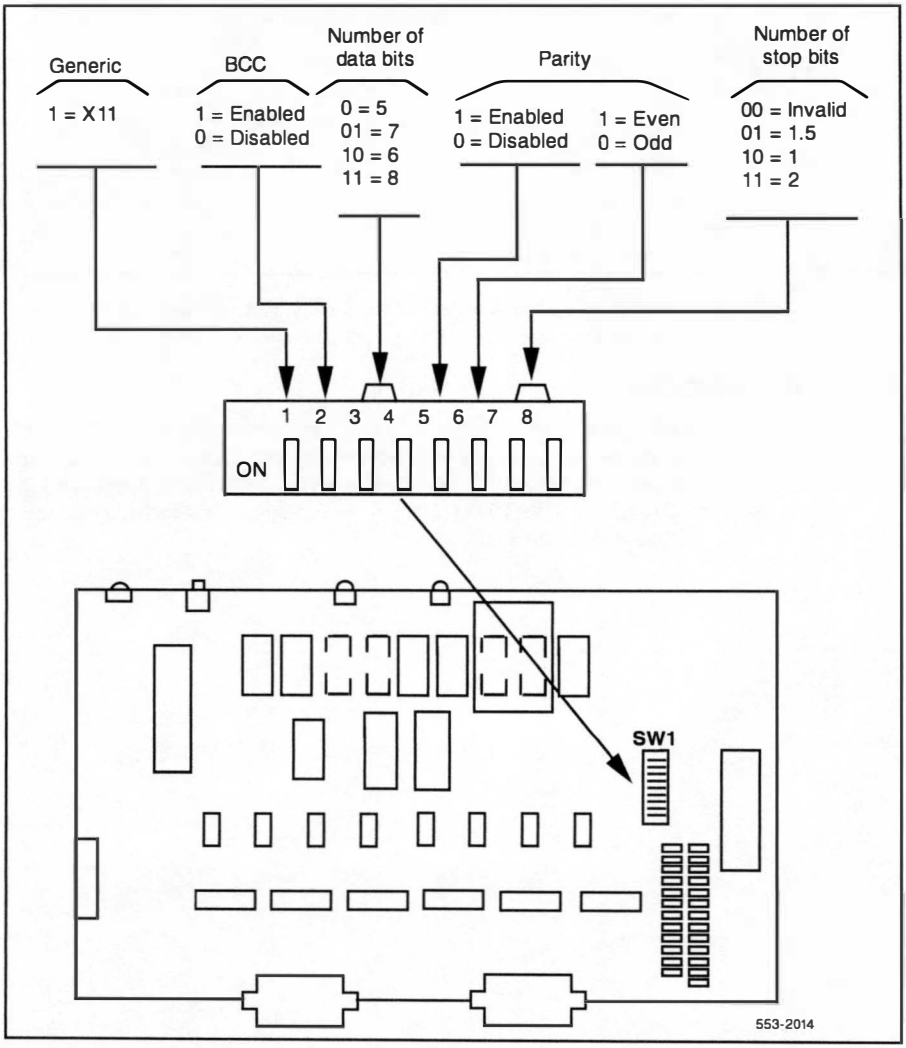


Note: The address is determined locally, and can be any number (00 to 15) not previously assigned to another SDI port.

BIPC options

Option switches and jumpers are located on the BIPC as shown in Figure 14. The options are on SW1 as seen in Figure 3. Set the jumper on W2 (A) to the data rate of the Meridian 1 (9600 bps, for example). Set the jumper on W1 (B) to the data rate of the PMS (1200 bps, for example). Be sure that the power is off, and observe the static.

Figure 14
BIPC option switches and jumpers



Cable connections

Connect data and power cables to the BIPC as detailed in Procedure 3 on page 36.

Operational checks

After the BIPC is installed, perform operational checks to verify that the BIPC is correctly transferring message data between the Meridian 1 and the PMS processor in both directions.

The actual operations for the test depend on the feature controlled by the PMS. In general, the procedure should check the following:

— Commands and data from the Meridian 1 are received correctly by the PMS processor.

— Commands and data from the PMS are received correctly by the Meridian 1.

Note: Use a datascope to monitor data transfer if a problem is suspected.

Procedure 4 on page 38 illustrates a typical operational exercise using Room Status.

Summary

To install the BIPC, follow these steps. Where the step refers to another procedure, go to that procedure for complete instructions.

1. Unpack and inspect the equipment (Procedure 1).
2. Ensure that the required option settings are set on the BIPC. For PMS IBM Series 1 computer, or your In House System (IHS), refer to Procedure 2.
3. Clear the BIPC mounting location.
4. Install the BIPC in its operating location.
5. Verify, and set if necessary, the option selections on the SDI circuit pack.
6. Using RS-232-C cables, connect BIPC Port A to the SDI and BIPC Port B to the PMS data port (Procedure 3).
7. Connect power to the BIPC, and press the RESET button on the faceplate.
8. Check the installation by performing typical operations on the system (Procedure 4).

   Note: To verify message transactions between the Meridian 1 and the PMS, it may be necessary to connect a datascope into the circuit. Once the operation is verified, the datascope can be removed.

Before unpacking your BIPC, ensure that the IBM series 1 is modified for PBX interface by LODGISTIX.

Procedure 1
Unpacking and inspection procedure

1 Open the shipping cartons and remove the equipment carefully. Inspect all items for external evidence of shipping damage. If there is noticeable damage, save the shipping cartons and notify Nortel Networks.

2 Remove the four screws securing the cover on the BIPC, and lift the cover from the unit.

3 Inspect the interior for components that may have loosened or been damaged in shipment (especially the 2716 PROM).

4 Report evidence of damage to Nortel Networks.

Note: If physical installation of the BIPC is to continue at this time, leave the cover off until you verify the option selectors and connect the power cabling. Otherwise, replace the cover on the unit.

Procedure 2
BIPC option verification

1 Remove the top cover of the BIPC (may already be removed in Procedure 1).

2 Check the data speeds for Ports A and B. Set Jumpers on options W2 and W1 to the positions marked with the required rates (Figure 14).

Note: Always use Port A for the BIPC/Meridian 1 interface and Port B for the BIPC/PMS interface.

3 Verify the options for Port B (selectors 3 to 8 on switch module SW1).

4 Verify selector 1 on switch module SW1 (ON for Meridian 1 systems).

5 Verify selector 2 on switch module SW1 (ON for BCC).

6 Replace the cover on the BIPC or proceed to Procedure 3.

Procedure 3
BIPC cable connection

1 Position the BIPC and the power supply at their operating locations (on top of the Meridian 1 cabinet, for example).

2 With the top cover removed from the BIPC, connect the power cable from the power supply to the power connector on the BIPC.

3 Replace the cover on the BIPC.

4 Connect one end of an RS-232-C cable to Port A on the BIPC, and the other to the applicable SDI connector on the SDI card.

5 Connect an RS-232-C cable (the maximum length is 50 ft) between the PMS data port and Port B on the BIPC. If the distance is greater than 50 ft, use a line driver or a short-haul modem.

6 Plug the power supply cord into a 110 V 60 Hz AC outlet.

7 The BIPC can now be placed in service, at any time.

The following procedure presents a typical exercise to verify the correct operation of a BIPC unit in a system set up for Room or Maid Status control. Before installing the BIPC, prepare the Meridian 1 for the interface. The preparation consists of the following steps.

1 The Room Status feature must be assigned to guest room directory numbers (DNs) (Controlled Class of Service Allowed [CCSA]).

2 Program a background terminal (BGD) capability on an SDI port. The Room Status feature can be administered from any terminal designated by a service change as a BGD. Use LD17 to configure the terminal with the following prompt-response sequence:

- IOTB—YES
- ADAN—NEW/CHG TTY xx
- USER—BGD (Note 1)
- PARM—YES
- NDIS—150 (Note 2)

3 Use LD22 and the following prompt-response sequence to verify the system configuration update:

- REQ—PRT
- TYPE—CFN

4 Verify that the number of Number of Display Messages (NDIS) shown on the printout is 150 or more and that the only user listed on the background terminal is BGD.

5 Connect an ASCII terminal (or TTY) to the background port and set the following options. After you set the options, type OP <CR> to verify the settings.

A	SE OP DI ON <CR>
	SE OP DI ME OF <CR>
	SE OP TE OF <CR>
	SE OP DI DE OF <CR>
B	SE OP PO (Port ID) OFF <CR>
	SE OP PO (Port ID) ST ON <CR>
C	SE OP CH ON <CR>
D	SE OP TI DE OF <CR>
E	SE OP TI RE OF <CR>
F	SE OP TI DI ON <CR>
G	SE OP SA ON <CR>
H	SE OP CO OF <CR>

6 Use the steps in Procedure 4 to test the operation of the Room Status feature.

Note 1: Only BGD message type should be assigned to this port. If other users (MTC, SCH, BUG, etc.) are already assigned to the port, remove them before proceeding to the next step.

Note 2: The number of background display messages can range from 0 to 255. To prevent losing Room Status messages during heavy traffic periods, NDIS should be set to 150 or higher. If the system memory does not allow for such an accommodation, assign the maximum number allowed.

Procedure 4
Typical operational exercise (Part 1 of 2)

Step	Action	Verification
Room Status test		
1	Input: SE ST xxxx CH IN <CR> (Set status of room DN to Check In. xxxx is the room DN)	Try making an outgoing call from telephone xxxx. The system should permit this call type as well as room-to-room dialing.
	Input: SE ST xxxx CH OU <CR> (Set status of room DN to check out)	Try making an outgoing call from telephone xxxx. The system should not permit this call type. However, room-to-room dialing should be possible.
	Input: SE ST xxxx CH IN <CR> (Set status of room DN to check in)	Try making an outgoing call from telephone xxxx. The system should now permit this call type as well as room-to-room dialing.
2	Generate Room Status messages by dialing the proper digits from the guest room telephone.	Verify the status update, which should display automatically on the terminal.
3	If the above test is successful, use LD43 to perform a data dump.	

Procedure 4
Typical operational exercise (Part 2 of 2)

Step	Action	Verification
Meridian 1/BIPC/PMS link test		
Be sure that the BIPC is installed correctly and turned on before continuing.		
4	Press the RESET button to initialize the BIPC.	The diagnostic LED on Port A flashes momentarily.
5	Type the proper commands on a PMS terminal to initiate the database swap from PMS to Meridian 1.	The Port A and Port B LEDs flash to indicate activity on the ports.
6	After the database swap, check into a room by entering the proper commands on a PMS terminal.	The telephone in the room should be unrestricted room-to-room and outgoing calls can be made.
7	Check out of the room by entering the commands on a PMS terminal.	The telephone in the room should be restricted except for room-to-room calling.
8	Repeat steps 6 and 7 for other rooms.	Verify the responses.
9	Generate Maid Status messages by dialing the proper digits from a room telephone.	Verify the cleaning status update on a PMS terminal.

Note: If the above sampling of commands and responses (or a similar sampling) is processed. You may have to connect a datascope into the circuit to verify the operations. Remove it after the tests are completed.

Operating procedures

Placing in service

Follow these steps to place the BIPC in service:

1 Verify that the BIPC is installed correctly, that Meridian 1 data fill is completed, and that all data and power cables are connected securely.

2 Plug in the power supply. (The red power indicator lights.)

3 Press the BIPC RESET button. This sends a <CR> to the Meridian 1.

The BIPC is now ready. No further adjustment is required for normal operation.

Restoring service

If, for any reason, service through the BIPC is interrupted, restart the BIPC by pressing the RESET switch. However, if the BIPC itself is faulty, it may be necessary to replace the unit. Additionally, check the SDI port to be sure that it is set and operating properly.

Repair procedure

The BIPC has no field replaceable parts other than the power supply. Replace a faulty BIPC with a working unit to ensure continued operation. To do so, follow the replacement procedures for defective Meridian 1 units.

Ordering information

BIPC equipment can be ordered from Nortel Networks by quoting the applicable ordering codes and quantities required as follows:

Equipment	Ordering Code	Quantity Required
BIPC	A0297075	One per PMS/Meridian 1 Interface (includes one power supply)
Power Supply	A0297998	One per BIPC

Specifications

Mechanical

BIPC mechanical specifications and associated hardware appear as follows:

BIPC (A0297075)

Size	Width: 14 in. (356 mm)
	Height: 2.5 in. (64 mm)
	Depth: 7 in. (178 mm)
Weight	2.5 lbs (1.6 kg)
Enclosure	all metal

Power Supply (A0297998)

Size	Length: 4.75 in. (121 mm)
	Width: 2.75 in. (70 mm)
	Height: 2.25 in. (57 mm)
Cables	Input: 6 ft (1.8 m), 3-wire, fitted with a UL/CSA approved 3-pin plug
	Output: 7 ft (2.1 m), 5-wire (18 AWG) with strain relief

Electrical

BIPC Electrical specifications and associated equipment appears as follows:

BIPC (A0297075)

Power requirement	+ 5 V dc, 800 mA
	+ 12 V dc, 100 mA
	–12 V dc, 100 mA

Power Supply (A0297998)

Input power	105 to 129 V ac, 57 to 60 Hz
Output power	+ 5 V dc ±5% at 1.0 A
	+ 12 V dc ±5% at 0.2 A
	–12 V dc ±5% at 0.2 A
Ripple and noise	ð 10 mV ms on all outputs
Regulation	ð ±5% on all outputs
UL and CSA approved	

RS-232-C interface

The following is a summary of the mechanical and electrical characteristics of the interface between the BIPC and an SDI port:

— Electrical interface: Compatible with EIA Standard RS-232-C

— Operating mode: Full duplex, asynchronous

— Signal logic levels:

- Space or ON = more positive than + 3 V (binary 0)
- Mark or OFF = more negative than –3 V (binary 1)

— ASCII character set

— No parity (parity disabled)

— Word framing: 10 bits consisting of the following:

- 1 START bit
- 8 DATA bits (Bit 8 is always tied to high)
- 1 STOP bit

— No message control (logical) protocol (that is, no ENQ, ACK, and so on)

— No data record frame characters

— The SDI port connector is female

— The SDI data port addresses are 00 to 15

— The prompt character is a period (hex 2E)

— The character sequence indicating that a Meridian 1 initiated data stream is as follows:

0DH 0AH 00H 00H 00H 00H 00H 00H (CR LF nul nul nul nul nul)

The following is a summary of the mechanical and electrical characteristics of the interface between the BIPC and a PMS port:

— Electrical interface: Compatible with EIA Standard RS-232-C

— Operating mode: Full duplex, asynchronous

— Signal logic levels:

- Space or ON = more positive than + 3 V (high)
- Mark or OFF = more negative than –3 V (low)

— Signal form: Compatible with EIA Standard RS404

— Data rate: 110, 134, 150, 300, 600, 1200, 1800, 2400, 3600, 4800, 7200, or 9600, selectable

— Parity: Odd or even (or no parity), selectable

— Word framing:

- 1 START bit
- 5, 6, 7, or 8 DATA bits (selectable)
- 1 PARITY bit
- 1, 1-1/2, or 2 STOP bits (selectable)

— Maximum message text: 100 bytes

— The PMS port connector is female

List of terms

ACK

Acknowledge or affirmative response from the receiver to the sender. If BCC is used, ACK also indicates BCC check matches.

BCC

Block Character Checks.

BIPC

Buffer Interface/Protocol Converter.

DCE

Data Communication Equipment. The interfacing equipment that couples from a data terminal into a transmission circuit or channel, and from a transmission circuit or channel into a data terminal.

DTE

Data Terminating Equipment. The functional unit of a data station that serves as a data source or data sink and provides for the data communication control function to be performed in accordance with link protocol.

DTR

Data Terminal Ready.

NAK

Not Acknowledged or a negative response from the receiver to the sender. For example, not ready to receive a message or a block of data received with errors, requires retransmission.

PMS

Property Management System.

SDI

Serial Data Interface.

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Meridian 1

Buffer Interface/Protocol Converter

Description

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NORTEL NETWORKS

How the world shares ideas.

Meridian 1

Property Management System Interface

Description

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Feature description

Reference list

The following are the references in this section:

- *X11 Features and Services (553-3001-306)*

This document provides feature, message control, and installation and configuration information for the Property Management System Interface (PMSI).

The Property Management System Interface is an optional software package (package 103) that allows the Meridian 1 to interface directly with a customer-provided Property Management System (PMS) through a serial data interface (SDI) port. This provides an effective means of information between the PMS and the Meridian 1.

> ***Note:*** A PMS typically consists of a computer, terminal(s), and software to perform billing and property management functions within the hotel/motel environment.

Both the PMS and the Meridian 1 have independent copies of the database; so, whenever the Meridian 1 updates its database, the PMS must be informed in order to keep both databases current.

Commands may be entered from a PMS associated with a terminal, a background terminal, or a telephone. If you issue a command from a telephone or a background terminal, the Meridian 1 will update its database and the new status will be sent to the PMS. However, if a command is entered from the PMS terminal, this command will be sent to the Meridian 1 and the Meridian 1 will update its database accordingly.

To ensure that all your commands are received correctly, issue only single-room DN commands at one time. Room cleaning status changes initiated by the cleaning staff from guest room telephones are provided to the PMS from the Meridian 1. These changes are initiated by Off Hook Detection, Dial Access, using a Room Status key (RMK), or by direct entry from the Background Terminal (BGD).

The Background Terminal (BGD) and Meridian Hospitality Voice Services (MHVS) interact closely with the PMSI. These features are described briefly in the following sections.

Background Terminal

The Background Terminal (BGD) facilities allow the hotel administration staff to enter, retrieve, and modify data that is associated with Automatic Wake Up Service, Message Registration, and Room Status on the Meridian 1 system. As with PMS, the BGD is connected to the Meridian 1 via an SDI port, and, in many cases, both the BGD and PMSI link are configured into the Meridian 1 system. This means that, for example, when a craftsperson enters a Check In command from a BGD terminal, an updated Room Status message will be displayed on the BGD and will also be transmitted to the PMS. For more information on the BGD, refer to *Background Terminal Facility description.*

Meridian Hospitality Voice Services

The Meridian Hospitality Voice Services (MHVS) consists of the Meridian 1 and the Meridian Mail Server (MMS). It uses the PMSI link (link between the PMS system and the Meridian 1) to automate processes, such as setting up mailboxes for hotel guests and creating group distribution lists. For example, a Check In message sent from the PMS will be used to set up a hotel guest's voice mailbox with a default greeting and new password.

The MMS is located between the Meridian 1 and the PMS in an MHVS system, and any command that is transmitted by the PMS is always intercepted and filtered by the MMS. Similarly, whenever a status message is sent by the Meridian I, this message will always pass through the MMS first, before it is passed to the PMS. For more information on MHVS, refer to the module "Meridian Hospitality Voice Services" in *X11 Features and Services (553-3001-306).*

PMSI and Meridian 1 messages

Reference list

The following are the references in this section:

- *X11 Features and Services (553-3001-306)*
- *X11 Administration (553-3001-311)*

The types of messages that are sent from the PMS to the Meridian 1 and from the Meridian 1 to the PMS are described below.

Types of messages

The types of messages that are sent from the PMS to the Meridian 1 are

— Temporary DID Assignment commands

— Temporary DID Cancellation commands

— Temporary Multiple DID Assignment commands

— Temporary Multiple DID Cancellation commands

— Check In/Check Out commands

— Activating/Deactivating Telephone Restriction commands

— Activating/Deactivating Message Waiting lamp commands

— Activating/Deactivating Do Not Disturb feature commands

— Call Party Name Display commands

— Multiple Language Wake Up commands

The types of messages that are sent from the Meridian 1 to the PMS are

— Cleaning-status changes as dialed by maids from hotel guest rooms

— Cleaning-status changes as entered on background terminals or special telephones (maid-inspector update)

— Cleaning-status changes that are caused by automatic update commands that could be programmed on the Meridian 1

— Call Number Information Messages

— Error messages that are caused by invalid PMS commands

— Polling messages (with X11 Release 19 and later)

PMS messages sent to the Meridian 1

Flexible Direct Inward Dialing messages

Flexible Direct Inward Dialing (FDID) allows hotels to temporarily assign a DN to a guest room by using a Background Terminal (BGD) or the Property Management System (PMS). FDID allows the Meridian 1 to assign and cancel the temporary room DN's.

Flexible Direct Inward Dialing (FDID) contains the following list of messages sent by the PMS to the Meridian 1:

DID Assignment Message:
SE ST <room DN> FD <did DN>
where SE = SEt, ST = STatus, FD <did DN> = DID Assignment message.

DID Cancellation Message:
SE ST <room DN> FD X
where SE = SEt, ST = STatus, <room DN> = A single room DN, FD X = DID Cancellation message.

Multiple DID Assignment Message:
SE ST <room DN1> <room DN2> FD X
where SE = SEt, ST = STatus, <room DN1> <room DN2> = A range of room DNs, FD X = DID Cancellation.

Multiple DID Cancellation commands
SE ST AL FD X
where SE = SEt, ST = STatus, AL = AL1 room DNs, FD X = DID Cancellation.

Note: An unassigned DID DN trunk call is directed to the Attendant DN.

Room Status messages

Table 1 contains a list of messages formatted and sent by the PMS to the Meridian 1. Each message is expected to have the appropriate protocol appended.

If the Directory Number Expansion Package (DNXP) is equipped, a Directory Number (DN)–related field in a Room Status command and response is expanded to accommodate up to 7 digits. X11 Release 17 adds VIP status and Maid ID to the SE command. Maid ID introduces the MI keyword and a 1- to 4-digit Maid Identification Number. The MI keyword, with the Maid ID, can be appended to a cleaning status command if the Maid ID package is equipped.

Table 1
Room status commands (Part 1 of 2)

SEt	STatus	DN	CHeck (IN)
SEt	STatus	DN	CHeck OUt
SEt	STatus	DN	OCcupied
SEt	STatus	DN	VAcant
SEt	STatus	DN	SAle
SEt	STatus	DN	NS (Not for Sale)
SEt	STatus	DN	REquest (cleaning)
SEt	STatus	DN	PRogress (cleaning in)
SEt	STatus	DN	CLeaned
SEt	STatus	DN	PAssed
SEt	STatus	DN	FAiled
SEt	STatus	DN	SKipped

Table 1
Room status commands (Part 2 of 2)

SEt	STatus	DN	COntrolled (ON)
SEt	STatus	DN	COntrolled OFf
SEt	STatus	DN	COntrolled (ON)/OFf
SEt	STatus	DN	E1 (ON)/OFf
SEt	STatus	DN	E2 (ON)/OFf
SEt	STatus	DN	REquest MI nnnn
SEt	STatus	DN	VIp(ON)/OFf
SEt	STatus	DN	LA O
SEt	STatus	DN	LA EN

Note: DN represents the Room Directory Number. Uppercase letters are the minimum input required to execute the command.

Message Waiting and Do Not Disturb status

The telephone-set Message Waiting lamp is normally controlled by the Message Center attendant. Do Not Disturb (DND) is controlled from an Attendant Console. With PMSI enabled, it is possible to turn these lamp conditions ON or OFF using the PMS computer.

At the physical link layer, the PMS computer functions as a TTY and is connected to the switch by means of a switch serial data interface (SDI) port. In the switch, each character received from the PMSI data link is treated as if it were entered from a TTY, and each character transmitted to the PMS computer is handled the same way as character output to a TTY.

The command processor interprets only the first two letters of each command word typed in. These letters are shown in uppercase, while the rest of the commands, including input parameters, are shown in lowercase. Parentheses indicate a keyword that is optional (or a variable that is a default).

The exact commands listed here are expected to have the appropriate protocol appended.

Message Waiting:
SEt STatus DN MW (ON)
SEt STatus DN MW OFf

Do Not Disturb:
SEt STatus DN DNd (ON)
SEt STatus DN DNd OFf

For PMSI, all new and existing commands are supported as of X11 Release 17. In addition, the new parameter (X11 Release 16 software), LAnguage, added to the OPtion, STatus, and CPnd commands, are also recognized by the PMSI.

Note: Only single Room Status commands should be sent from the PMS to the Meridian 1.

Automatic control

The PMS can request the system to automatically change the room status of all occupied rooms to "REquested" every day at a specific time by sending the following message where "hour1" is the time in 24-hour format:

SEt OPtion TIme REquested hour1

To cancel the automatic status change, the following message is sent:

SEt OPtion TIme REquest OFf

Off Hook Detection

The PMS can specify a time when the cleaning staff can use the room phone to signal that the room has been cleaned. The room phone handset is lifted and left off hook to signal "cleaning in PRogress." When the handset is replaced, cleaning status is updated to "CLeaned."

X11 Release 17 introduces Maid Identification. Off Hook Detection sends the default Maid ID number of zero (o) to the PMS if the Maid ID package is equipped. See *X11 Features and Services (553-3001-306).*

The option is set using the following command, where "t1" is the start time for the Off Hook Detection plan, and "t2" is the end time for the Off Hook Detection plan:

SEt OPtion TIme DEtect t1 t2

Note: End time (t2) must be greater than the start time (t1). If the end time is not entered, t2 defaults to midnight, 2400.

Dial Access

The Dial Access option is an enhancement of the Off Hook Detection method for updating RMS data, and expands the list of RMS commands to seven. To set the PMS for Dial Access, use the following command:

SEt OPtion TIme DIal (ON)

To disable Dial Access, use the next command:

SEt OPtion TIme DIal OFf

Dial Access is supported only by room phones with Controlled Class of Service Allowed (CCSA) and is limited to changing the status of its own room. Also, Dial Access requires the use of SPRE numbers that precede special access codes for RMS functions. Table 2 shows the necessary SPRE dialing commands.

Table 2
SPRE dialing commands

off hook	SPRE# 861	on hook (REquested)
off hook	SPRE# 862	on hook (in PRogress)
off hook	SPRE# 863	on hook (CLeaned)
off hook	SPRE# 864	on hook (PAssed)
off hook	SPRE# 865	on hook (FAiled)
off hook	SPRE# 866	on hook (SKipped)
off hook	SPRE# 867	on hook (No Sale)
off hook	SPRE# 86X*nnnn#	on hook (Status) Maid ID

Note 1: The X in 86X for Maid ID must be 1–7.

Note 2: The characters 8, 9, 0, #, and * are reserved for special functions and are not allowed as input for SPRE code commands.

Call Party Name Display name change

The PMS computer can change a Call Party Name Display (CPND) "name" associated with a given DN. To execute the change, use the following commands:

SEt CPnd dn "guest name" xpln LAnguage # room status

Legend

dn	=	station set DN
"guest name"	=	CPND name for the DN
xpln	=	Expected Name Length
#	=	language assignment for the room
room status	=	RMS coded indicator (checked in or out)

The CPND name must be enclosed in double quotes and *cannot* contain an asterisk (*), colon (:), or carriage return (<CR>). You must define the CPND data block in LD 95 before implementing the SEt CPnd command.

The first SEt CPND command defines the CPND name and the expected length. If the XPLN field is not specified, then it defaults to the actual size of the name string or the default length (DFLN) defined in LD 95, whichever is larger.

Refer to *X11 Features and Services (553-3001-306)* to configure and enable CPND.

Call Number Information messages

With X11 Release 12 and later, if the terminating telephone has Call Number Information Allowed (CNIA) class of service (CLS), the system sends Call Initiation and Call Disconnection messages for calling and called DNs on a real-time basis to the Background Terminal (BGD) and PMSI ports.

Class of service for CNIA is limited to 60 sets and is assigned in LD 10 and LD 11. Refer to Nortel Networks technical publication *X11 Features and Services (553-3001-306)* and *X11 Administration (553-3001-311)*.

> ***Note:*** A set that is assigned Virtual ACD Agent (VMA) class of service *cannot* be assigned CNIA class of service.

Message formats sent to the BGD port and PMSI ports are shown below, where "XXXX" is the calling DN, and "YYYY" is the called DN:

ST-CI XXXX YYYY

ST-CT XXXX YYYY

> ***Note:*** The calling or called DN can have up to 7 digits if equipped with the DNXP package.

When equipped with the DNXP package, the Originating DN and Terminating DN fields in Call Initiated and Call Terminated messages are expanded from 6 bytes to 7 bytes.

Call Initiated (CI) A Call Initiated message is sent when the terminating set has Call Number Information Allowed (CNIA) class of service (CLS) and one of the following conditions occurs:

- The telephone set goes off hook and a number is dialed.
- The call is reestablished from On-Hold status.
- The telephone set is the third party in a Call Transfer.
- The set terminates a Forwarded Call.
- The call is picked up by a station.
- The Call Waiting key on a CNIA set is pressed.
- The call is extended by an attendant.

Call Terminated (CT) A Call Terminated message is sent when the terminating set has Call Number Information Allowed (CNIA) class of service (CLS) and one of the following conditions occurs:

— Call termination to a non-CNIA set

— Call Forward No Answer (CFNA)

— Call Park

— Call Transfer from originating or terminating sets

— Call Pickup received by the set

— Conference call

— Call On Hold

No messages are sent for the following call types:

— Dial Intercom calls

— overridden calls

— attendant calls

— CNIA-originated calls

— Automatic Wake Up calls

— trunk calls

Meridian 1 messages sent to the PMS

Table 3 provides a list of Meridian 1 messages sent to the PMS.

Table 3
Meridian 1 messages sent to PMS

Message formats	Type of message
ST <dn> RE	Cleaning status (cleaning requested)
ST <dn> PR	Cleaning status (cleaning in progress)
ST <dn> CL	Cleaning status (room cleaned)
ST <dn> PA	Cleaning status (passed inspection)
ST <dn> FA	Cleaning status (failed inspection)
ST <dn> SK	Cleaning status (cleaning skipped)
ST <dn> NS	Cleaning status (note for sale)
ST-CI <dn1> <dn2>	Call initiation
ST-CT <dn1> <dn2>	Call termination
ST PO (X11 r19 and later)	Polling message

Message control and protocols

The envelope used for messages between the Meridian 1 and the PMS is ASCII-encoded control characters listed in Table 4 (<STX>, <ETX> <ACK>, and <NAK>). In addition, each message block is terminated with a <BCC> character. The <BCC> is used to maintain message integrity and is an "exclusive or" of all bytes following the <STX>, including the <ETX>.

The general message format is listed below:

STX (message body) ETX BCC

The <BCC> follows the <ETX> character in the transmission, and the receiver immediately verifies the message. If the <BCC> is correct, the receiver responds with an <ACK>. If the <BCC> does not match, the receiver responds with <NAK>.

Table 4
Message control and special characters

Character	Hex code	Definition
STX	02	Start of Text: Message body follows.
ETX	03	End of Text: End of message body.
BCC		Block Check Character
ACK	06	ACKnowledge: Affirmative response from the receiver to the sender. If BCC is used, ACK also indicates BCC check matches.
NAK	15	Not Acknowledged: Negative response from the receiver to the sender of a block of data received with errors; requires retransmission.

Message protocols

Software protocols have been implemented to supply a method of flow control across the data link. The PMS computer is given priority, and the responsibilities of the system and the PMS have been defined.

Meridian 1 protocol

The following sections list the transmitting and receiving requirements for the Meridian 1 protocol:

Transmitting requirements

— The Meridian 1 must calculate a <BCC> for each message, and transmit it as a terminating character.

— Prior to X11 Release 19, when the Meridian 1 transmitted a message to the PMS, it would ignore any <ACK> or <NAK> received from the PMS and would not attempt to retransmit the message. Instead, the Meridian 1 could transmit a new message to the PMS immediately following the previous message, without any gap in transmission.

With X11 Release 19 and later, when the Meridian 1 transmits a message to the PMS, it no longer ignores an <ACK> or <NAK> received from the PMS, but waits for a specified interval (defined on a system basis) for the PMS to respond before sending the next message.

Receiving requirements

— When the Meridian 1 receives a message from the PMS, a <BCC> for the received characters following the <STX> and including the <ETX> will be calculated and compared with the received <BCC>. If the BCCs match, an <ACK> is sent to the PMS. If the BCCs do not match, a <NAK> is sent to the PMS.

The <ACK> or <NAK>, sent back to the PMS, will follow any message that is currently being transmitted by the Meridian 1, such as a room cleaning status message.

PMS protocol

The PMS can operate using three slightly different protocols:

— PMS 1
The first PMS protocol is the standard interface and default value.

— Format 2 (Format B)
The second protocol allowed requires a carriage return (<CR>) to recognize the input message.

— Format 3 (Format C)
The third protocol allows for any updated RMS message sent to be followed by the old room status whenever a room DN checks in or checks out.

Within all three types, it is recommended that the PMS adhere to the following protocol requirements:

Transmitting requirements

— The PMS must calculate a <BCC> for each message and transmit it as a terminating character.

All messages transmitted by the PMS should be "single room" commands. The PMS may run into timing and flow-control problems if you use "multiple" room commands.

— After transmitting a message, the PMS must wait for the Meridian 1 to acknowledge receipt of the message within a predefined period of time.

The recommended period of time for the message acknowledgment timer is 2 seconds.

If the PMS receives an <ACK> from the Meridian 1 before the acknowledgment timer expires, the PMS can transmit the next message immediately. That is, the PMS does not have to wait for the acknowledgment timer to expire before transmitting the next message.

If the PMS receives a <NAK> from the Meridian 1 before the acknowledgment timer expires, the PMS can retransmit the same message immediately. That is, the PMS does not have to wait for the acknowledgment timer to expire before retransmitting the next message.

After three retransmission attempts, however, the PMS should take the following actions:

- Flag the problem to hotel personnel so that the usual corrective action can be taken.

Note: The usual corrective action for most problems would involve the determination of the exact cause of failure, the correction of the problem, and a database swap to resynchronize the system.

- Store the message in an error file, and then send the next message.

— **If the PMS does not receive an <ACK> or <NAK>** from the Meridian 1 before the acknowledgment timer expires, the PMS should assume that the message was lost and should retransmit the same message. The PMS should continue to retransmit the same message until the Meridian 1 acknowledges receipt of that message.

The PMS should queue all other messages for the Meridian 1. If the PMS queue fills up, messages may be lost and a database swap will be required to recover the lost messages. If PMSI messages are lost, the PMS should flag the problem for the hotel personnel.

Note: Some vendors using the PMS protocol may want to follow an earlier strategy of allowing only three transmission attempts, after which the message is stored in a PMS error file and the next message is transmitted. The new strategy described above is designed to facilitate recovery from short-link outages.

— The PMS should send an <ACK> or <NAK> upon receiving a message from the Meridian 1.

Prior to X11 Release 19, it was not necessary to send these characters in response to PMSI messages, because the Meridian 1 did not retransmit a <NAK> message and did not wait for a response before transmitting the next message.

With X11 Release 19 and later, it is strongly recommended that the PMS send <ACK> and <NAK> responses, because the Meridian 1 now has the capability to retransmit messages.

In addition to message retransmission, X11 Release 19 introduces a polling functionality to test the status of the PMSI link. The polling message may not be recognized by the PMS. However, it is strongly recommended that the PMS treat the polling message as a standard Meridian 1 message by responding with an <ACK> upon receiving the message in its correct form.

Note: It is required that <ACK> and <NAK> characters be sent only between message packets. That is, if the PMS is in the middle of sending a message to the Meridian 1, it must finish sending the complete message before sending an <ACK> or <NAK> back to the Meridian 1.

Receiving requirements

— When the PMS receives a message from the Meridian 1, it is recommended that the <BCC> of the messages received be checked internally by the PMS and an <ACK> or <NAK> be sent back to the Meridian 1.

— It is recommended that any error detected be stored in an error file.

Note: The PMS must not send any error response to the Meridian 1 about a received message, such as "Invalid command" or "Syntax error".

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Meridian 1

Property Management System Interface

Description

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